Samb. F. Earl
Wardsb
M D

Prop

# Notes
On the
Lectures
of
Benjamin Rush M D

Professor of the Institutes and Practice of
— Medicine —
— in the —
University of Pensylvania

By Samuel F Carl

Philad^a

# Notes on the Lectures Delivered by Dr. Benjamin Rush.

While Empires totter and in ruins lie,
And Monarchs fall, and with their glories die
Thy name, O Rush shall brave the wreck of time,
And be revered in every distant clime;
Shall cheer the sons of Science in their way,
And beam around them with the light of day
Thy fame shall burn when dazzling lights expire
And unborn ages feel the glowing fire,

7

9

11

15

November 8th 1810

Physiology considers the living human body and its healthy functions

Pathology treats of the causes of disease and the diseased state of the body — Physiology treats of the circulation of the blood — This science is of the utmost importance in surgery and Physic. Botany & Chemistry are useful — The bones are like the letters of the alphabet. Physiology frames it into words. Anatomy to the outline of a picture & Physiology gives it its various shades they should go hand in hand —

Physiology is the most entertaining study. It affords proof of the existance of a Deity — Haller, Blumenbach, and Richerand are the books proper to be read. The latter is best=

on the Practice of Physic there are no books which I would recommend — the modes of acquiring knowledge in the practice of physic, are public (Schools) Lectures, attending the sick — by the latter means we are enabled to compare Nature with books — Xeno taught from his porch — Diogenes from his tub, Lectures contain all the discoveries of every year, by attending the symptoms of the sick, more lasting impressions are made on our minds than by reading books — Haller says our ears are more faithful in retaining ideas than our eyes punctual attendance on lectures is necessary —

Quick pulse is an uniform symptom of the first stage of inflamed, this I will shew you in succeeding Lectures

The
life
breat

by
that
do
Sw
ar
as
a
the
an
you
dar
the
rso
or
Ph
upo
y
to
ian

The diseases of the United States differ materially in their nature and force from those of other countries — by visiting patients we see symptoms that are indescribable in books —

As easily may a person learn to swim by reading a treatise on that art, without going into the water, as a student of medicine become a good physician, without attending the sick — though he attend Lectures and read books — disappoint not your patients by irregular attendance. furnish your patients with their medicine as soon as possible — visit neither early in the morning nor late in the evening — be good Physician must of necessity be an Apothecary — Cullen was an Apothecary — Do not neglect to attend common cases of disease. for the purpose

of being uncommon ones - by
sitting up with the sick at night
you will gain great advantage by
observing the exacerbation of Fever
the appearance of the eyes, mouth &c

self denial to sleep is absolutely nec-
-essary to a physician, never leave
your patient till perfectly cured,
for it is necessary, when he is conval-
-escent to give him advice as to diet,
drugs &c - let your visits to fe-
-males be marked with the greatest
delicacy - bad air and close rooms
are injurious in fevers, Phthisis
Pulmonalis —

Chemical Lectures are of great
importance they were first intro-
-duced in Edinburg - Vienna
was also famous for it. De Haen
&c were good physicians —
owing to their chemical knowledge

November 9th

We proceed to enquire into the manner of becoming acquainted with the causes and progress of disease.— enquiries should be made of the patient consult the relations of the patient as to his constitution &c — patients will tell their most violent, though not their most dangerous symptoms, Guilt, Debt, & Love are often the cause of Disease — the swelled legs of the natives of Barbadoes occur to those people in every part of the world to which they go, learn if possible the manner of former attacks of the same disease — it is important to know the occupation trade &c of patients — you should enquire into family remedies. ——— the urine, stools, state of the skin &c should be examined — we should know what aliments and drink

agree best with the patient —
the state of mind, memory, dreams
&c afford some knowledge of the patient
disease, the usual mode of lying in
bed should be known — the counte-
-nance, state of the eyes, dilated
pupil are to be noticed — there are
cases in which dilated pupil does
not indicate diseased brain — the
~~state~~ of the tongue whether black,
yellow, moist &c are to be observd
the Tongue may be become dry
by sleeping with the mouth open
the nails of invalids are to be in-
-spected —

The Pulse often informs us of the
derangements of parts — —
like the dial of a watch, the pulse
indicates the regularity or irregular-
-ity of the system — this was first
pointed out by Galen — I shall
enquire into the pulse in its natural
then its Morbid state

When natural it beats 80 strokes open, soft - vigorous, free from all re-
-sistance and at equal intervals. —
in old age the pulse is less frequent
42 in a minute - more full and
with intermissions, a free pulse
in old age with regular strokes is
a sign of disease, different states
of society influence the state of the
pulse - I examined ten Indians
in 1793 in 8 the pulse was 66 in
the others 40 - the pulse is always
less in Indians than those of civil-
-ized states - this is owing to the dif-
-ference of mind & climate influence
the frequency of the pulse - it is
more frequent in new comers than
in old residenters —

Season influences the pulse by the
stimulus of heat - the pulse varies
with the temperature of the air —

— The pulse of the Savages less frequent than those of civilized nations —

differ in frequency more in the sleeping than in the waking state —

different positions of the arm act on the pulse — the pulse is increased by pregnancy —

it is less frequent in the morning than at any other period of the day — it increases till midday — decreases till Evening — Exercise is hurtful to invalids at 7 6 Accession mane the pulse is influenced by light and darkness — it is less frequent when lying down than sitting up — Anger increases the pulse to 104 — grief reduces it to 60 — Conversation increases the pulse — therefore you should not converse much with your patients untill you feel the pulse —

Menstruation increases the pulse — Coughing — intensity of thought; increases it — blisters also affect the pulse according to the parts to which they are applied ——

I shall next inquire into the Morbid State of the Pulse

November 10th

Inquiry in to the morbid state of the Pulse — The heart and arteries may be compared to a set of bells which when one is rung the whole sound — in affections of the lungs & uterus, the Pulse does not always sympathize. I shall mention cases in which blood from one arm bears the buffy coat, while that from the other does not exhibit this appearance

We meet now and then with cases of malignant fever in which there is no pain, heat nor foulness of tongue —

In Malignant fevers the pulse sometime rises from 4 to 240 in a minute — its frequency is occasioned by morbid irritability of the blood vessels — The pulse deviates from health in frequency & quickness — Frequency of pulse is indicated by the number of strokes in a minute — Quickness is the greater or less time in which each pulsation is made —

febrile pulse always accompanied
with jerking —

The pulse varies from 60 to 180 —
I have read of a man whose pulse beat but 7 strokes in a minute — he died of Apoplexy — —

The morbid cause of deviation in the pulse are 1st pressure on the brain as in Apoplexy — 2 Spasm of the heart — 3 Defect of vivitability in the arteries occ- -asoned by the excessive force of stimuli, miasmata &c — the pulse depends from its force with respect to order and regu- - larity — it imparts a sensation of jerking I shall mention 1st the depressed or oppressed pulse — This is almost imperceptable at the wrist — the depressed pulse is distinguish from the weak one, by imparting often being felt some time, a tense sensation — which the weak one will not — a very weak pulse is generally regular — the depressed pulse is generally slow tho' sometimes irregular. There are first the preternaturally frequent pulse —

+ plegia

+ and in convulsion of the muscular system

a depressed and weak pulse are very different —

Bradford's case —

2nd the preternaturally slow pulse
3rd the pulse with intermission & the pulse perfectly natural in frequency but somewhat depressed as in typhous fever & when this is only in one arm & the depression arises from the compression of an internal artery — a depressed pulse occurs generally in tremors of the body and convulsion —

a depressed pulse may be compared to a willow tree bent down by a sudden blast of wind — the storm passing away, the tree soon rises again — it occurs in the forming stage of fevers it imparts a tense ~~pulse~~ sensation — it occurs in morbid affections of the heart, brain stomach and bowels, more than in any other viscera — it occurs just before venesection, and sometimes after, it is owing to the excitement of the system being as it were suffocated — it is preternaturally slow at times — 2nd there is a distinct but small pulse generally quick I call this the sulky pulse it is also —

+ in congestions of the brain

now and then in yellow fever —
in Ply — it was no sinecure

+ in the declining state of fever —

called cat gut or corded pulse, generally occurs in fevers —

3 There is a pulse in fevers full round vigorous, frequent, quick not tense or hard — it occurs in yellow fever — & Call it Synochus Fortis

4 There is a full, quick, frequent, tense, but not round pulse, call it Synocha it occurs in inflamatory fevers — Pleurisy, Gout & it feels like a large quill —

5 — There is a quick, frequent, tense and small pulse, which occurs in chronic ~~[illegible]~~ Rheumatism & it imparts a sensation like feeling a small quill call it Synochula or contracted Synocha — 6 — There is a full, round, soft, frequent pulse ~~without tension~~ — Call it Synochus Mitis, it occurs in billious fevers — 7 There is a compound of Synochus and Synocha, it is partly tense and partly soft, it feels like a marbled quill, call it Synochoid

it met with *

* It is by some supposed to be owing to an in the blood vessels

8 there is a frequent pulse, with non
ana therm, a round full and tense
stroke - call it Typhoid, it occurs
in the beginning of gaol & Hospital fevers

9 - There is a weak, small & frequent
but not tense, nor full pulse, it forbids
venesect - and calls for cordials, call
it the Typhus - in malignant
fevers, the blood vessels are suddenly
deprived of irritability — this pulse
is like a tree struck with Lightning
it requires to be propped up - and strengthened by the rays of the sun ~~and~~ art

10 there is a natural, full, round and
frequent pulse but so soft, as to fade
under pressure - it gives to the finger
a sense of emptiness - call it the Gaseous
Pulse, it occurs towards the close of
malignant fevers — 11 there is a
quick and frequent pulse - rarely
Synocha, Synochoid or Typhoid, call
it Hectic pulse - it occurs in pulmo-
nary consumption ——

and in Sunkardt

12 There is an unequal and alternating pulse – 1st there are 2 or 3 weak strokes succeeding a strong one – this is the hobbling pulse 2 unequal and fluctuating in extremes from great force to weakness and vice versa this occurs in yellow fever 3rd there is a double pulse – two distinct strokes after short intervals, one weaker than the other weaker the

13 There is a pulse weaker than natural, small, frequent and vibrating the sensation like the edge of a saw Call it the Serrated Pulse. I have never felt this pulse – –

14 There is a pulse, small, frequent & resembling the motion of a worm – Call it the Vermicular Pulse –

15 There is a pulse, weak, wiry and failing, it occurs at the close of Fevers – Call it the Creeping-Pulse

16 There is a pulse which occurs in malignant Fevers, perfectly natural to appearance & attended with dangers

17 The Morbid Pulse supposed to occur only in affection of the cerebellum. Then vertigo may be combined 1st the pulse is sometimes quick and frequent, depressed and open. Slow and intermitting, slow as opposed to frequency — all at the same time and in the same person —

2 The pulse may be full, strong & frequent or full, strong, and quick at once — There is sometimes a full, bounding pulse neither vigorous, nor natural as in Palsy it resembles the Synocous fortis but is more regular — There is a weak, low pulse in debility without morbid excitement — in Hypochondriasis — weakness & frequency of pulse go together at the close of all diseases — — — —

The pulse of a horse in England is 34 in the U.S. 40 - the pulse may be absent for many days. A Lady in consequence of heating Chara Oysters, was without pulse for 36 hours - but the recovered - in diseases of the bowels, the pulse is generally small and retarded - Aneurismatic tumours affect the pulse I attended a Capt Hardie of the US navy, who had an intermitting pulse. Dr Physic was called in, and he inquired of the patient if he had not a tumour on some part of his body after a while, the Capt said he believed he had one on his neck but it never troubled him, on examination the Dr found an aneurism of the carotid artery - this caused the Intermitting Pulse

November 11th

## Direction for feeling the pulse

Always feel the patients pulse before he describes his disease or tells you his pains - for conversation affects the pulse - The first impression of the pulse like the first sight of a mark to a Sports-man is always the best - Apply all your four fingers to the pulse when practicable, and press gradually - feel the Artery in both arms, for pressure on either arm influences the pulse - if the arm be exposed to the air it will give an incorrect idea of the pulse, for it is affected by that exposure - feel the pulse for at least 20 strokes - The Chinese feel 29 strokes before they ~~strike~~ prescribe - The sensibility of the fingers is increased by rubbing them with warm water - In Great Britain and in some parts of the United States, Quarter minute Glasses are used for feeling the pulse - It is formerly that Physiology was that branch of Science which considers the functions of the human body in its healthy state - The life of the body

first engages our attention — In Animal Life, motion, heat, sensation and thought — we are ignorant of the nature of this motion —

## Of Animal Life in its Healthy State

All matter would be quiescent if no Stimulus were applied — nothing moves itself — Excitability is the Capacity of Sensible as well as insensible motions — Animal life as Dr Brown says is a Forced State — The human body is not an automaton or self moving machine, but is kept alive by the action of Stimuli — The Soul and Body of Adam were cast in the same mould at the same time — I invite you to look with me into the garden of Eden — Who is that figure, which we behold, cold, lifeless, and pale? It is Adam — but who is that august and venerable personage we behold descending from heaven and entering the garden? It is the Creator — he comes to breathe into the nostrils of Adam, the breath of life — we read in Genesis, the Lord God breathed into his nostrils the breath of life, or as it might be read, the air of lives, and he became a living Soul —

The air moved the quiescent lungs, these moved the quiescent heart, this the brain and the latter moved the quiescent mind — as Adam was created so is every child that comes into the world — Respiration in an infant is at first involuntary — voluntary actions may be made involuntary and vice versa — Light after Animal life — It is remarkable, that the progenitor of the human race was not created until all the bright luminaries of heaven were made — Life is the effect of certain stimuli acting on the sensibility and excitability which are extended in different degrees to the different parts of the body — The human body is moved by external force and like the mind is acted on only by impressions made on it — The causes of animal life are air, light, sound — I proved the first from Criticus — Dr Brown supposes the mind to be active in sleep — but I believe with Mr Locke that it is passive — Life is languid in the morning, perfect at noon, and in the evening it becomes languid again —

November 13th

Air gives the first impulse to Life – it is the primum mobile of life in infancy – Sound has an influence in promoting life, the exercise of walking is performed from habit without consciousness, the schoolboy and the clown invigorate their feet by whistling a song as they pass by a grave yard, ardent spts intoxicate easier when accompanied with Music, persons destitute of sight and hearing, support life in a less vigorous state than others, Colours assist in promoting Animal Life. heat influences Animal life. its influence is evi-dent in the decay of vigor in ani-mals in winter, exercise influ-ences the support of animal life – it first affects the muscles, then the heart & brain –

the
as
lipu
tom
bet
a
i
th
ity
of
lec
me
ul
in
ex
la
th
im
to
ap

the pleasure of the senses influen-
-ces life, the internal stimulii of
life, are 1st food, this acts on the
tongue first, there is a sympathy
between the tongue and other parts,
a little Sp. Lav or sugar will restore
a fainting person — food acts by
its stimulus on the stomach, qual-
-ity sometimes supplies the quantity
of food — an Onion will last an
Highlander 24 hours. horses have
been supported by clips of Ceder
moisten'd with water — food stim-
-ulates the body by digestion —
in this process, perhaps air is
extricated, the single acts on the
lacteals, mesentery &c in its passage
through them — the Blood is one
important stimulus, it appears
to act as Dr Whyte says, by a spe-
-cific quality — and persons who die
of Hunger,

no
the
the
min
ref
ad
the
wh
is a
tho
lib
ac
Do
mo
of
to
ac
Jo
m
off
of

no diminution is perceptable in the quantity of Blood in the vessels the exercise of the faculties of the mind, act in supporting life by reflection; after being excited into action by impressions made on the body — a woman who is attacked with plague during pregnancy — is always delivered before death — those who use study in Moderation live the longest — the imagination acts powerfully on the body — Dr Darwin relates the case of a Man who overcame the fatigue of a days labour by exercising hatred towards an enemy — persons of active passions, seldom live long — Isaac Newton possesd a vigorous mind but mild passions, disease often depends on a morbid state of the brain, excitability is the medium through which,

Stimuli produce sensibility - a warm bed after exposure to intense cold - has produced Pleurisy, natural sleep is induced by removing stimuli from the system — if a countryman comes to town and is exposed to the noise of carts and assays his excitability is expended and he sleeps at 9 O Clock - here the system is depressed to the sleeping point artificial sleep is induced by Opium &c - at the usual hour of sleep there is a diminution of stimuli as sound, light, heat &c in Cities the Air applied to the lungs in sleep, acts more powerfully than in the waking state — I think more Air is phlogisticated during sleep. — The Blood vessels are the fountains of power in the body they are the Sentinels of the System

Aliment in the stomach acts more powerfully in Sleep, than in a waking state —

Labourers object to milk as a diet, because it digests too soon — they prefer Sausages because they can feel them in the Stomach all day — We dream more in the morning when our bladders are full than at any other time — the fæces stimulate in sleep and when the intestines are full, they occasion the waking State — Dreams occur only when there is a deficiency or excess of Stimulus — Persons who go to bed well and are found dead in the morning, die of the Night Mare or Stoppage of the Circulation of the Blood — Motion is necessary to a child, therefore rocking in a cradle is useful — Impressions originally painful become pleasurable by repetition — Excitability predominates over sensibility in Infancy — Laughing and coughing promote animal life in infancy laughing is a characteristic of our Species — It is as easy for a child to cry and be fat as to laugh and be fat —

Dreams occur in early life — new objects are never seen by children without pleasure — In the middle of life man is in his most vigorous state — fewer persons die at 40 than at 17 — Old people require twice as much food as young persons, to produce equal excitability — Life is preserved in old people by the stimulus of fancy, in some measure — hence they are always costive — Dreams are universal in old people — it is often justly said, we are once men and twice children —

It is owing to increased excitability in old people that little ardent drinks intoxicate them — more ~~—~~ women live to be old than men, but more men live to be very old than women — Persons born blind possess great sensibility in other organs —

November 14th —

The sensibility of the fingers and ears supplies the loss of sight in many persons — the defect of some senses is made up by the increase of the mental faculties — In idiots there is both an absence of mental faculties and of the locomotive powers — how is animal life supported without food? —

Long fasting is occasioned by disease & notions of religion — the Salivia by long fasting excoriates the fauces — Benj. Lay undertook to fast for 40 days and his breath was intolerably fœtid. — Death from the absence of food is owing to the abstraction of the Stimulus of food — Indians live under the influence of less stimuli than civilized people and do not live so long as the last — The despotism of Turkey not only depresses the Mental faculties of its Inhabitants but also their Systems — Garlic, Opium and Coffee are universal diets among the Chinese — man cannot exist without Sensations of some kind either natural or artificial — Mental life —

1st — Desire of life —

2 [illegible]

3 [illegible]

4 [illegible]

Vegetable life is as much the effect of Stimuli as Animal ~~to~~ life is — from a review of what has been said on Animal Life, we see ~~that~~ depends as much on the influence of impressions as matter does — like the sounds produced by striking a Bell — as much is the body affected by external impressions, as the tide of a river is by the causes external to it — it has been said that man consists of Spirit, Soul and Body — Spirit consists in spiritual exercise — this resides in the Brain — the Soul is diffused through the Body — my doctrine makes man consist of two parts — Soul & Body — this accords with Revelation — Moses and all the prophets shake hands with Dr Brown in the doctrine ~~that~~ Animal Life is a forced State — Life is as certain the effect of the Stimuli of impressions as the movement of a Ship are owing to the wind — Life is Mechanical — the Ship and clock are only matter of a lower grade — the body of man is a higher grade but cannot be its own mover — Death is produced first by the sudden abstraction of Stimuli — 2 — By the force of two great Stimuli — 3 — By two great relaxation —

4 – By an Error in certain parts –
5 – By the action of poisons – 6 By a
Solution of continuity – 7 By preternatural
rigidity or ossification – the matter of
phosphorus is tossed in a close vial &
requires the contact of air to produce light –
Thus it is with the body – we think by
force as well as live by force – as well
might we stop the action of the heart by
pressing the pulse – as arrest our thoughts –
Clay doctrine first offers a nervous system
2 – It assists us in promoting longevity by the
force of stimuli – 3 –

4 –
5 – It enables us to reject the doctrine of
innate ideas and makes us rely on the
opinion, that our ideas come from without –
lastly – it does homage to the Governor of
the Universe – it leads us to the difference
between the works of the Creator & a common
architect – the doctrine of animal Life, I
have delivered, tends to lessen, the pride
of man – it shows him his dependence on
the Creator – after death the Soul & Body
of Man will be reunited and equalled in
one point to their Creator – that of
Immortality –

^although it is supposed men resist cold better than women —
the ova of insects resist cold better than the insect themselves —

+ hence they resist cold, better.

November 15th

## Animal Heat

1st It is the same in all climates and seasons as is evinced by the Thermometer, 2 It is the same in all ages — 3 It is the same in both sexes under similar circumstances — 4 It is the same in every part of the body nearly, in a healthy state — it is 1 degree greater in the lungs than any other part of the body — 5 it is the same in the solids as in the fluids — 6 It is one degree less in a sleeping than a waking state — 7 Heat is unequally distributed on the surface of the body and in the viscera

Stevenson says animal Heat depends on Fermentation in the Blood — I deny this altogether — 1st fermentation is incompatible with the living body, 2 — Putrefaction is not attended with heat 3 — All animals that breathe as we do, have the same degree of heat — Another theory of Animal heat, is the friction of Substances on the Body — 1st Heat cannot be produced by friction of the blood — 2 In producing heat by friction, one of the bodies should be at rest —

the bones of some birds contain air for the same purpose -

*They have been found in Stones &c and have supposed to have been there for centuries - air must have been conveyed to them -

Another theory is, that heat is produced by the action of the particles of the blood on each other — Dr Cullen says the heat of the body is the effect of the Principle of vitality — all these theories tend to one adopted by Dr Black — I shall give you his theory — Combustion is one mode of exciting heat — this was supposed to be owing to the discharge of Phlogiston the Dr says we all carry a fire place with us — the chimney is in the lungs — this is proven by 1st the absolute necessity of air to animal life — this is true of all living beings — fishes require air — they receive it by means of their gills and die for want of it — insects receive air by means of long tubes called trachea, if these be stopped, the insects die — snails die without air — in winter they cover themselves with a slight coat, thick enough to admit air — thus it is with the toad — insects destitute of lungs have a membranous tube running along the back — 2 — the quantity of air consumed is the cause of heat — one gallon is consumed a minute — 3 It is said that animal heat is proportioned to the air consumed —

for this reason the Granite Cadrés carry them in their bosoms, in order to lessen the heat of their bodies in warm weather &c —

A case of the total extinction of life by drinking cold water, occurred in my practice; the animal heat continued at its usual height for hours —

it is 111 degrees in birds — their lungs are large — in fishes it is lower — very low in toads — 4th air discharged from the lungs is phlogisticated — 5 the red color of the blood is said to depend on oxygen — 6 From the azotic air of the lungs — 7 from arterial blood being warmer than venous blood — to this I object — first — the heat of the body has been observed to same when the lungs are obstructed — 2 the heat of a limb is warmer after the operation for aneurism — 3 — the heat of the body is the same when the pulse is high & low — 4 — it is diminished in old age — 5 The passions of the mind increase the heat of the body, but they convey no oxygen — 6 action of air on the body imparts no heat 7 — the heat of the lungs is only one degree greater than the heat of other parts — 8 There is often a partial heat in the extremities — I shall now give my own theory —

First — All bodies contain Caloric in some measure — 2 Many of these bodies increase heat by friction — 3 Different inanimate bodies have different degrees of heat

causes of animal heat are combustion, friction, percussion fermentation and electricity –

this being admitted, I infer, 4th that
animalized bodies contain a quantity of
Caloric, which when acted on by friction
produce heat, as the action of Stimuli
on them — Animal heat is the product
of Stimuli acting on the latent Caloric
of Bodies — decomposition of oxygen &c,
may influence animal heat — we find
the heat of the body lessened by purging, by
which we abstract Stimuli — the back
of the head is warm in the fit of an In-
-termittent — this depends on the Stimuli of
the senses — the abstraction of one Stimulus
increases the powers of the remaining Stimuli
in producing Animal Heat —

The animal heat was greater than usual in
a sailor a patient of mine, with
yellow fever, although the pulse
was scarcely perceptable —
certain sounds increase the heat
of the body — An officer who was
in the army during the revolution

has informed me, that after the first fore he was always seized with a burning heat on the surface of his body —

certain passions increase the heat of animals

Love, anger and [illegible] increase the heat of the body

Why does not the heat of the body rise with the heat of the atmosphere — Bleeding, purging, &c have a tendency to prevent the influence of Solar heat on the Skin — the hands of Bramins are always cold — they live on vegetable diet — it remains to be proven that alimentary exist on the Skin — the use of animal heat are — first, to preserve the fluidity of the Blood, 2 — to give sensibility to nerves & irritability to ~~arteries~~ muscles — 3 to render the senses more acute, lastly to promote the Solution of food in the Stomach — ———

Pre
is
cons
ho t
of R
Ann
dy
ed
ne
d.
wou
de
lecu
aspi
the
1st
over
fric
tion
2
Lec

November 18

Respiration is at first involuntary it becomes voluntary by habit — it consists of inspiration and expiration no two persons have the same number of respirations or inspirations in a minute — in proportion to the activity of Animals their lungs are removed farthest from view — the lungs are little sensible and irritable — wounds and abscesses in the lungs do not produce pain such that seem to want sensibility in health appear to have it in disease —

the causes of

1st — an uneasiness in the breast after every act of inspiration and expiration from the stimulus of Air and distention

2 the stimulus of air taken into the Lungs — 3rd

the
ast-ti
leat-
first
Aux
hau
2nd
3. ob
i a p
Vhar
exter
imo
ngu
T Au
the
be A
into
7! A
offe
The
Outs
Ger

the uses of respiration are
1st to admit air in to the lungs —
heat — motion, sensation, thoughts were
first excited in the progenitors of the
Human race — the lungs act like a
pair of bellows
2nd the air imparts a sense of heat —
3 its Oxy — gives a red color to the blood —
4 a portion of Oxy — is admitted into the Sys —
Many stimuli applied internally and
externally in a gradual manner are
innocent — when suddenly taken they are
injurious
5 Air received into the lungs increase
the irritability of the muscles —
6 Respiration seems to convey Moisture
into the lungs
7 It seems to convey out of the body
offensive matter, as Nitrog — Carb — Acid
The matter discharged, have been the
subject of much discussion — Young
Animals live longer in Oxy — than Old
one

Animals die easier in Oxy- than Nitrog.— that is their heads are less in the former —

Carbonic acid gas in the lungs is intended to defend them from the bad qualities of Nitrog —

8. Respiration serve to propel the Blood through the vessels —

9. [illegible]

10 it enables the stomach and intes- -tines to discharge their contents, also the uterus, in parturition —

Lastly - it serves the noble purpose of forming the human voice —

By [illegible]

Females move their breasts, men their Abdominal Muscles most — it is said the Physician should never ask the sex of a child in petticoats — he should know it - by the breathing

Respiration occasions coughing when the lungs are stopped with mucus

the
sure
a dy
If o
and
a Al
afton
figure
for in
leow
law
nath
it c
Accor
tion,
Acte
Alwor
Lord
the
gus

the action of coughing is a convulsive Motion — Sneezing is frequently a Symptom of Pulmonary Consumption It occurs about the crisis of Fevers and is a favorable sign — Yawning is a slow act of respiration — it occurs often persons have been much fatigued — Panting urges the blood forward.

laughter consists of short acts of inspirations and expiration — when moderate it conduces to health —

Hiccup is a violent act of respirations — Coughing is a deep convulsive action, deep expiration, succeedly short inspirations and occurs in the last stage of fevers —

the first impulse of air in infancy gives pain

Gy
I con
-omy
Histo
form
Lary
-ed'd
the
way
Doun
i w
muc
In
dec
of the
tun
las
hro
how
Glot
Stu

November 17

# Of Voice and Speech

I conceive Physiology to be to Anat-
-omy What Philosophy is to natural
History — The parts which assist in
forming the Voice — are the Trachea,
Larynx & glottis — the voice is rend-
-er'd stronger, by forcing the nose
the voice is produced in the same
way as sound from a wind instrument
sound is not destroy'd — when the larynx
is wanting — the uvula contributes
much to the perfection of voice —
In blowing the nose the sound pro-
-duced, is in proportion to the velocity
of the air in the nose and the aper-
-ture of the Nostrils — the Pharynx,
larynx, mouth and nose, concur in
producing the voice, it is most
powerful when passing through the
Glottis — mouth & nose in a state not
Stimulated —

Bri
in th
whic
their
Ann
ble
rend
mun
ble -
and
acor
ation
is th
of a
Brac
short
to th
brow
who
at
in
Deva
tion
of

Birds contain reservoirs of air in their lungs and cells, full of which contribute to the melody of their Voice — A want of the Frontal sinus renders the Voice dull Mr Lodart concludes that the different tones of voice are 1032 in number — this appears almost incredible — Sounds are divided into Acute and grave — they are acute or grave according to the shortning or elongation of the glottis — Whispering is produced by a tremulous motion of air in Trachea — Singing is a prolongation of voice — the Trachea is shortened or elongated in proportion to the length of the tones — the tremor produced by singing pervade the whole body — the Voice changes at puberty by an increase of strength in the larynx — the voice is much varied by the position, many variations can be produced by contraction of the Trachea.

For
Trac
when
the
Voic
nec
them
is o
of th
the
whe
is c
The
incor
trac
hold
up
such
2 y
notic
Quec
Co

In order to clearness of voice, the Trachea & larynx should be clean. when stopt: proper speak through the nose as it is called ___.

Voice alone gives Man no preeminence over brutes – 'tis by speech more than by anything else that Man is superior to brutes – Modification of the voice depend on the size of the trachea and larynx – it is lower when standing than sitting – it is weakened by eating a full meal the thyroid gland is a grand provision made in order to prevent the trachea from bursting when we hollow.

1st there can be no speech where respiration is not voluntary

2 if the Larynx be cut above the glottis there will be voice but not speech, if below the glottis there will be speech but not voice

the
excer
sent
the
Glott
herb
and
Hum
apis
the
excer
opre
used
The
larg
say
Kren
thru
excer
Glott
Spec
vocu
etom

the larynx & glottis are first exercis'd by crying — this is wisely sent to promote the action of the muscles — the larynx and glottis are exercised in laughing — perhaps, the reason why laughing and crying are peculiar to the human species, is because they assist in forming the voice

the muscles of the tongue are exercised about the 7th or 8th month after birth — the lips are not used in pronouncing aaa, aaa —

The muscles of the lips supple the larynx — the lips now join to say Mam-Mam — Sometimes children exercise their lips by blowing throwing them — by the constant exercise of the muscles, moving the glottis, children are prepared for speech — they begin to name the vowels — vowels are the very skeletons of language —

Sang
as th
love
the
Spee
are
their
tathe
a
in
on
are
the
the
the
the
unth
are
pro
mco
Que
hen
Lem
Jon
ap

Languages are soft in proportion as they abound in vowels, therefore teeth assist children in speaking — the ear and eye, the avenues of speech to children — their sound are at first substantive nouns their ears inform them of their mistakes — if they succeed in repeating a word right, they will retain it — in acquiring language, children are assisted by looking people in the face, singing to them, makes them acquire words sooner than speaking, singing makes lasting impression — the voice of savages are full of musical tones, the pronunciation of children is incorrect at first — Speech is acquired by imitation — indolence has great effect on speech — hence the few words used by Indians — Indians give their assent by a grunt — hem &c —

fewer
pro
in
nor
free
becau
pend
less
lan
oo.
Ig
for
drin
leon
nam
refer
that
ed.
Dur
Supe
the
8 mo
Phot

fewer muscles are employed in pronouncing words which abound in vowels than those which have most consonants — rapidity of speech is facilitated by good hearing — Ventriloquists speak in inspiration instead of expiration — the English Language consists of upwards of 50,000 words

## The Uses of Speech

It enables Man above all other animals — where there are few words there can be few Ideas Man's prerogative has been said to depend on his reason — I believe that Adam spoke after he breath-ed, as much as I do that he walked Our Fathers are to us, what the supreme Being was to Adam the difference is that we require 18 months to learn to speak — Adam spoke immediately after birth —

Sir

I c
cour
des c
hear
the p

Ge
hi

the c
lyne
lep b
is ta
arri
succ
with
Stri
the
able
favor

Nov. 18th

Circulation of the Blood

I shall inquire 1st into the course of the Blood, 2nd I will describe the structure of the heart and its peculiarities. 3rd the powers which move the Blood.

A description of the blood in its passage given —

The contraction of the ventricles synchronous — part of the colorless blood on the inside of the heart is taken up by the lymphatics carried by them to the Thoracic Duct — thence conveyed to mix with kindred blood in the heart —

Structure of the vessels —

the position of the heart is favorable to its action — its action is favored by the pericardium

the cardiac nerves in a coronary artery nourish the heart - this artery stimulates the nerves of the heart - the heart is the reddest muscle in the body - it beats ~~4500~~ 60 strokes in an hour - on an average - it moves and is moved by the brain, it is chiefly active in moving the fluids to be secreted - In the whole there are two auricles and one ventricle - it rudimentates itself in a cance in some worms - many experiments prove that the heart possesses great stimulability - it is remarkable that the right ventricle beats longest - its cavity is more irritable than its external surface - its sensibility is less than its irritability - the heart is more irritable in old than in young animals - Dr Ramsay informed me that the left ventricle was larger in Americans than Europeans -

they
of
Pleu
hos
Hav
exte
de a
the
fosu
arte
the
to th
vere
the a
curv
tion
Ho if
all
of a
the

# Peculiarities of Arteries

They are elastic — Haller denied their Stimulability — all arteries possess great mechanical elasticity — Hunter says this resides in the external coat — it is greater in dead than living animals, it is the distention of arteries that forms the pulse — the heart and arteries have synchronous motion — the Arteries are strong in proportion to their diameters — Aneurisms occur oftenest near the heart — the arteries are strongest at the curvatures — it is here that ossification most frequently occurs — ossification begins internally — all the arterial branches are sent off at acute angles — they anastomose — the large vessels are protected by a strong covering

all
veir

They
poin
the
nera-
have
numb
hundr
blood
in
cont
Me
nera
Pon
arte
mea
mon
com
the a

all arteries are stronger than veins except the iliacs —

## Peculiarities of Veins

They discover marks of muscular ~~power~~ coat near the heart They are thinner than arteries, their fibres run longitudinally and of course have no pulsation. they are more numerous than arteries — they are kindly provided to return the blood to the heart — It seems as tho' Blood letting had been contemplated in the formation of Man — valves are most abundant near the extremities of veins — they contain more blood than the arteries — as 3 to 4 — this is the reason why congestions most common in veins — the action of congestion is on the right side the arteries give the the first notice of their formation —

Powers moving the Blood

1st the heart is kept in action by the stimulus of air tension & it is kept up by the action of the Brain the blood vessels act by quality as well as quantity — it is a specific stimulus to the heart — the Heart derives a large portion of its irritability from the influx of the brain this is proved by mental affection of the heart — the force of the Heart little truth in calculation — impossible in living Animals — in dead animals, useless — the body has been said to contain 2½ lbs of blood —

irritability and contractility of arteries — the pulse is more active in a paralytic arm, than in the other — In Paralysis the pulse beats 150 while the heart beats but 75 — Arteries sometimes move after Death —

The
of the
this
where
a fr
was
the
dent
the

The
vein
-ing
or v
to
Tigu
the

The irritability of arteries is proved by the stoppage of divided arteries — this is by the contraction of the fibres — then irritability is shown in fevers — the arteries are active during sleep — hence called centres of the body — they never repose — the heart and arteries are moved by the stimulus of the Blood acting superficially upon them —

A pulse has been felt when there was no blood in the vessels — the arteries moves the blood independently of the action of the heart — the blood is propelled against gravity

Nov^r 20

The powers which move the blood in veins are — 1^st Pressure of surrounding Muscles — 2^d Pressure of muscles or viscera in which the blood tends to stagnate 3^d the pulsation of contiguous arteries 4^th respiration 5^th the suction of lymp — in the veins —

4th
the
4th
some
nitio
of ve
steps
ears
they
If
1st to
2nd
3rd to
to a
many
the
hen
steps
ne
in
of

6th irritability as demonstrated in the vena cava descendens —

7th in small veins — from inflamation sometimes following V S — in addition to these causes — the influx of venous blood in the heart during sleep — to their irritability. Haller bears unwilling testimony — he says they are slightly irritable —

The Uses of veins are

1st to support the action of the brain
2nd to give nourishment to the body
3rd to give tension to the nerves —
to supply nervous matter —

many errors noticed on this head
the Heart has been ascribed as being full of air — Dr Harvey we owe the dissipation of many errors —

we have seen the stimulus of air in producing life — the Phenomena of respiration &c —

Let

the

le c

ice

with

with

In

I al

I leg

Physi

there

I the

he

hath

ignor

cries

the

to l

the

the

the

by u

Let us view the effects of blood on the Brain &c.

The Brain, nerves, and muscles, are all connected — they are proper specific actions — we observe thought without sensation of motion — motion without sensation or thought —

In treating of the nervous System I shall pursue the usual order — I begin with the brain — here Physiology must be almost silent — there was a time when the valves of the heart was as unknown, as the parts of the brain — of many parts of the brain we will be even ignorant — let us receive best discoveries as pledges of future ones —

the great importance of the brain to life — the forms of the bones of the cranium covering the brain, the brain is defended from injury by being divided into cerebrum and

and
minds
then
should
a pi
should
which
of a
Hall
Breh
Blow
in tu
lym
in th
to o
Body
the
of
for
notio
plac

and cerebellum - the cerebrum is divided by the falciform process - there is a great difference is different skulls - Dr Gall considers the brain as fitted by the mind - and the skull by the brain. the arteries which carry blood to the brain, are less elastic than elsewhere ——

Haller says ⅙ of the Blood in the Body is sent to the Brain - the Blood in the Brain moves it - by this in turn the heart is moved - no Lymphatics have yet been discovered in the Brain - the nerves are said to originate at the extremities of the Body and to terminate in the Brain the Brain has various motions -

1st From the pulsations of its arteries

2nd from every act of respiration -

3rd A german Anatomist, says that motion like muscular action takes place in the brain - this is in a diseased State

the cerebrum has little sensibility — a red hot iron, passed through it does not always occasion Death —

It has been said that Man possesses a greater quantity of brain in proportion to his size, than any other animal — An Ox's brain weighs $\frac{1}{4}$ as much as a man's — it has been reported that intellect is in proportion to the size of the nerves —

All sensation is situated in the brain in the Human Species — This is proven by ligatures on nerves. the parts below the ligatures are insensible the pains of parturition —

the
Appro
ven
Desc
Plan
Appro
says
alle
then
Dr G
ven
prov
rch a
do
5 an
ten
he A
a
is ce
Han
the
i Di
i Lu

the brain is the seat of the mind different parts of the brain have been supposed to occupy it -

Descartes - placed it in the pineal Gland — Haller thinks the mind is diffused Throughout the brain, Hartley says the Medullary part is its seat —

A Clergyman had sound intellect when half of his brain was destroyed -

Dr Gall says the right side of the brain like the right side of the body is most active - I agree with Dr Haller perhaps Dr Hartley is in part correct - I do not confine the faculties of the mind to any one spot - I believe they are often translated from one part to another the senses are often translated - there is a wonderful sameness in all the viscera of the body - the salivary glands convert Blood in to saliva - the Brain command to the secretory organ, the Liver which prepares its fluids & sends them out —

# Of The Nerves

These appear to be, a continuation of the Medulla and Spinal marrow Darwin thinks they contain fibres — all sensation is conveyed from them to ~~the~~ mind — They do not appear to communicate like blood vessels. They branch at acute angles, — they are uniform in size — smaller in man than any other animal — the nerves of a horse are 10 times larger than those of a man — the smaller the nerves the greater the sensation of hair — the nerves are said to be covered by a continuation of the pia mater —

Dr Monro Describes serpentine lines in nerves — they are provided with Ganglia — Monro says they are thus rendered more sensible — The stomach liver and spleen have less sensibility than might be expected from their quantity of nerves — The testicles have great sensibility and few nerves —

the nerves of organs which act involuntary are most (sensible) irritable
the reason why the viscera do not possess great sensibility is because it would be injurious, owing to their internal situation where they cannot be so easily relieved - I shall apply this to our Pathology —
the nerves are differently modified for the various senses - the tongue possess sensual sensibility in a great degree, but not common sensibility it is wounded without giving great pain — some have thought there were different nerves for sensation and motion — Dr Fox saw a patient with sensation on one side — and not on the other. Motion of some kind is indispensably necessary to sensation — there can be no thought without some kind of motion — the nerves must possess some kind of motion — —

Sensibility descends in amphibious animals — digestion — and secretion cannot go on without nerves — cut nerves unite more slowly than muscles — I have said they are instruments of sensation — the question is then, do they communicate sensation to the brain?

Haller says that all parts do not possess sensibility, but I deny this, all parts have sensibility under peculiar forms and modifications —

Dr Whytt says a grain of opium has paralyzed a nerve —

the skin in certain fevers loses its sensibility to cantharides — and fire itself yet nerves must exist there — patients in the United Hospital had their feet burnt without feeling sensation of pain — ligaments tho' insensible in health, susceptible of sensibility in disease —

the
blood
existe
the
"
to the
certain
in
give
the
remi
of the
bros.
should
sens
infor
mus
a fu
mes
no
infer
no

the same remarks apply, to the Blood - the uterus is exquisitely sensible in the menses - not so in the intervals - The teeth are sensible to the action of cold, but not to firm certain impressions gradually applied give no pain, when suddenly, they give much pain, and even death

Are there any sensations, unaccompanied with pleasure or pain? I think there are not - a fine prospect affords agreeable sensations, while sensual gratification affords sensations called sensual -

impressions are not always accompanied with sensation -

a purge that does not gripe, must produce motion yet there is not sensation produced -

impressions do not produce sensations always in the parts to which

they
big
the
retur
wood

I wo
lenso

brou
impre
the
Jens
our
can
We

The
me o
reone

they are applied — stone in one kid may often produce ~~pain~~ in the other — there is no proportion between sensation and the stimuli producing it —

Nov^br 21st

I proceed to enumerate the laws of Sensation — 1st All sensations are in proportion in a certain degree to the impression producing them — 2nd the force of impression in producing sensations are according to their — duration — 3rd only one sensation can be excited in the mind at once We read that Julius Caesar

The transition of the mind from one subject to another, makes some people believe that more ideas than

[illegible]

one, can be excited in the mind at once - in reading - we take in not only letters, but words, lines &c children pronounce words of the same length, alike - as country and county - the eye in this case only takes in the first syllable - as useless for useful &c 4th When a number of impressions of equal force act on the mind at once - they produce sensations similar to all the impression - as in the sound of instruments - in all cases of compound sensation the impressions should be synchronous - 5th certain sensations continue, after the impression exciting them have been removed - A coal of fire which round appears like a circle 6th abs. sensation, are proportioned to the stimulus applied and in proportion to the sensibility - the sensation is destroyed -

Patients complain of Physicians depleting, but nothing is more obviously plain than, that where sensation is prostrated by too great impressions, that there should be dispensed — 7th a feeble sensation of a pleasurable nature, often destroys a painful one — here it is necessary that the painful impression should have been of long continuance — Ideas are derived chiefly by the senses of hearing and seeing — sensations are influenced by habit — the disposition to acquire habits is not confined to Man — it is extended to animals and Vegetables

1 Painful sensations become pleasant by habit — 2nd certain sensations originally painful, become pleasurable by repetition — the hardships of a savage life become agreable by habit — 3 certain sensations originally pleasant become less so by repetition, as the cold Bath —

6th certain sensations are destroyed by repetition — this is the case in the exhibition of medicines it is necessary to change them often — some poisonous vegetables become innocent by habit — 6th certain sensations are influenced by age —

7 Sensations from comparison are rendered more perfect by repetition — as a draper by feeling his cloth —

8 Ideas are rendered by the action of impressions originally producing them + 8th — two or more sensations being excited together are ever after associated in the mind — — —

Give the

We come next in order to speak of the Peculiarities of —

## Muscles & Tendons

Muscles are composed of fibres invested with cellular membrane — Muscularity exist in every part — The brain, lungs &c — to their Muscularity is owing Spasm, and convulsion &c there is no spasm without muscularity — some muscles terminate in tendons, attached to bones, they are provided with veins, arteries, nerves &c they derive their color from the blood — Muscles as some think are not continuation of nerves + they become longer and shorter in acting — the term relaxation is improper — contraction is better — it differs in different muscles — it is greater than in common matter — the force of muscular action, is influenced by the quantity of blood —

Muscles become paralytic as well by want of Blood as Nerves - there is more strength in muscles than in tendons the Tendo Achilles will often break, the muscles remaining sound The extensors or muscles are weaker than the flexors, hence the bent posture in old age - Hollow muscles have most irritability - as the heart, intestines &c it is owing to the irritability of the intestines, that faeces are discharged after Death - the different muscles are acted on by different stimuli - the lungs by air - the heart by blood - the stomach by food - irritability is greater in animals in proportion to the weakness of their intellect, irritability in some animals is related to the quantity of muscles - there are 466 in the human body - 4100 in some animals - it is owing to the smallness of many muscles that he is weaker.

than other animals proportionate in size - the force of muscles is increased by the action of stimuli externally applied — The Indians have a practice when they get tired, of taking a log of wood on their shoulders - running some distance, throwing it down - then lift it up and run again, then throw it down — to supple their muscles — the action of the will increases muscular strength - the strength of muscles lessen after Death -

Animals possess the power of reproduction of parts - few parts of the body of man are renewed but the hair, nails bones &c — Birds possess the reproducing power in a great degree - the taenia next —

## The office of Muscles —

1st. does the power which moves muscles reside in the brain? There can be no doubt, that the brain is the great reservoir

of strength to the muscles — yet muscles do act independent of the brain in some cases — Hallers days they possess an inherent principle or power of action Galvanism favors this motion.

Vis insita exists in certain muscles they are tributary to the brain a tree grows from its roots &c

This vis insita is most obvious in animals with least brain — vis insita is in an inverse ratio with sensibility — whether this principle be a quality of muscles I know not — some physiologists suppose it different from the principle of sensation — this is evident — nerves & muscles act by being affected with different stimulus — irritability is distinguished only by the disorganisation of muscles — irritability predominates over sensibility in infancy — they are equal in middle life, and in

old age they return to the state of infancy — hence we are said to be once men and twice children. —

Some medicines are said to act on sensibility others on viritability —

I shall mention some laws influencing the action of Muscles

1st there should be a communication with nerves. 2 a communication with the heart by means of the arteries — 3. a communication with the veins — Boerhave says the integrity of ~~muscles and nerves~~ is necessary to viritation — 4 a muscle should not be kept long relaxed at once —

## Influence of Habit on Muscular Action

1 Actions become more correct by heart and repetition as in children learning to walk — 2 the tone of muscles is influenced by repetition, as carrying a heavy load —

3rd – the facility with which muscular actions are performed, is increased by repetition, as in fiddling, dancing, sailing, climbing a mast in a storm

In proportion as charity is exercised we love our feeling to aid bros. –

Repetition lessens the frequency of Motion.

4th repetition increases the strength of muscles. a man who lifts a calf every day yearly, will be able to lift in 10 years, an Ox – the wings of wild birds, who fly much, are stronger than the wings of those who fly little – 5th Muscles acquire a dark color by exercise & actions are influenced to a certain degree with respect to velocity and duration, by repetition – thus rope dancers acquire a gility – 7 repetition associates motions, with out necessity – without – those sensations which belong to each of them

8 Repetition of associated motions not necessarily connected — one eye cannot be moved without the other —

9 Repetition occasions motions without a renewal of the impression originally producing them —

10 certain involuntary motions are rendered voluntary by repetition & vice versa — this is an important law of habit — Too much study cannot be bestowed on this subject —

Origin of the Power moving Muscles

the motions of muscles are divided into voluntary and involuntary — some are performed with the aid of the will — others the reverse — respiration

involuntary motions have been called vital — the brain, heart, blood vessels, lymphatics, Uterus &c are involuntary in their Motions

The voluntary motions are mastication deglutition; respiration — the latter is semi voluntary — the origin of involuntary motions is difficult to understand — the doctrine which I have delivered points it out — I cannot agree with Dr Berkelys in his opinion — nobody has ever discovered the nature of the first act of respiration —

there can be no mind without a brain: no will without a mind. —

the heart is a continual stranger to repose — &c

we are told of some who could increase the frequency of their pulse —

I think this was occasioned by thinking on irritating subjects —

no actions of the Body were original by voluntary — they became so by habit — respiration appears to have been originally involuntary — the bowels more involuntary, yet Darwin —

mentions a case in which a stool could be procured at any time —

there can be no voluntary actions without the aid of the will *

November 22nd

Voluntary Motion — explained by the application of Stimuli

The will has no more power of motion without Stimuli than a dead body to raise itself from the grave — in walking the equilibrium of the body is preserved by throwing the weight in an opposite direction — Stimulus in volition appears first in the muscles of the back† — the arms for some time after birth seem confined, because they are not governed by the will — persons reduced to weakness by sickness, recover the powers of the will, over the muscles, by repetition

It maintains that intimate con-
-nexion between parts, by which
impressions on one part produce
sensation in another part, this is
called Sympathy, this is not
confined to motions and sensa-
-tions - but to Ideas - every planet
performs special offices, but each
is connected with the other by inva-
-riable laws - every wheel in a
block has a specific office, but
all its parts are connected - so
individual organs perform partic-
-ular - offices but all are connected -
perhaps all sympathies were con-
-nected with sensation at birth, perhaps
the lungs felt a acute pain under
the first impressions of the air, the
cessation of pain in the lungs is
compared to the solemn silence of
those luminous bodies which move

round ~~the~~ ball — the sensations of infancy often revives in old age

In describing the sympathetic, my history of them is taken from the morbid states of the system — —

1st Sympathy from continuity — kept up by parts ~~different~~ of similar nature from each other

2nd Sympathy from contiguity — the first appears in the nerves — formerly it was said to belong to ~~wholly~~ to the nerves —

Sympathy of continuity by means of nerves is carried on by means of ~~the relaxation~~ a relationship subsisting between them and the brain — I refer you to Dr Wright on Nervous diseases — the eyes sympathise with each other yet their nerves do not communicate

the sympathy of continuity is divided into Reciprocal, Non Reciprocal & Inverse

Sympathy between the stomach (when diseased) and brain is reciprocal — the action of sympathy between diseased kidneys and the stomach is non reciprocal — The morbid excitement of the lungs, as in coughing, is inverse sympathy. the contraction of the skin by cold water is cutaneous sympathy — The itching on the glans penis in calculus is occasioned by a continuation of the same membrane — this is Delusive Sympathy — The noise produced by scratching a slate with pencil communicated to the teeth is Contiguous Sympathy —

In what order do impressions keep thro' the fibrin of the Blood?
The fibrin of the Blood is homogeneous.
Sympathy of contiguity depend on a communication of substance in —

in different parts of the body. contiguous to each other — Disease of the Uterus and liver induces colic by contiguous Sympathy — the communication of earth, water, air &c by an Earthquake is contiguous sympathy — the animal body is the highest grade of matter. a specific stimulus acts upon it — pain, heat, cold, numbness perhaps belong to both sympathies — Dr Why it does not admit any sympathy but that which takes place in the sensorium — but he overlooks the objection that all matter is acted on by stimuli —

## Principal Sympathies

1st the brain has an extensive sympathy with different parts — hence vomiting in affections of the head —

2nd the stomach sympathises with the head, liver, heart, uterus, skin, the whole body, mind, tongue &c —

3rd Intestines sympathises with the stomach and pelvis hence nausea and colic – with the liver and lungs hence dry cough – with the shoulder, with the limbs, with the Diaphragm – with the rectum hence pain in going to stool –

4th the lungs sympathises with the skin, with the genetals &c

5th the diaphram sympathises with the stomach, with the nose hence sneezing, risus sardonicus the eye sympathises with the car stomach. pudenda, nipples &c

these sympathies are continuous and contiguous – the teeth sympathises with the head, stomach, lungs &c the bladder with the urethra, palms of the hands, soles of the feet — in old age, retention of urine burning of the soles of the feet — the urethra sympathises with the testicles, hence swelled

Testicle

100

## Idiosyncrasies

These excite nausea in some - convul-
-sions are excited by sounds & sights in
some - [illegible]
[illegible]
[illegible] Sympathy between bodies and mi-
[illegible]

Love, anger, joy &c with the parts of the
Body - [illegible]
Sympathy - I refer you to
The theory of agreeable sensations from
the [illegible] - refer you to it -

## Remarks -

1st Many sympathys are incited by
disease which do not exist in health
as in Risus sardonicus - 2 many sym-
-pathies of health suspended by disease
as that between the nose and diaphragm
the more violent a disease is the more

are the natural sympathies destroyed — disease effects a dispolution of natural sympathies — 3 Sympathies differ in different people — 4 Sympathies differ in ages and sexes — 5 Sympathies differ in different years in the same diseases — 6 Sympathies differ in different seasons — perspiration in winter sometimes induces catarrh, in summer Diarrhoea — By ~~removing~~ removing the sympathies between different parts we cure different diseases, with more facility — The stomach sympathises more with the trachea than with the lungs — By ~~removing~~ removing the sympathy between the liver and stomach we cure dispepsia by curing Hepatitis —

November 23d.

There are five senses – viz
the sense of Touch, hearing, seeing,
tasting, feeling – Dr Darwin adds
another viz the sense of heat – The three
senses of Touch, taste & seeing act mechan-
-ically, the others chemically – The brain
may be compared to large cities accessa-
-ble by canals &c – Sensation enters by va-
-rious ways

Touch has been confined to the fingers, but
it extends to all parts of the body. the
sensations in generation are produced by the
touch – I proceed to speak of the sense of
touch by which we discern hardness –
softness, smoothness, roughness, pressure.
heat, cold, &c the perceptions acquired
by this sense, and that of taste, are
less durable than those of other senses –

# Peculiarities of Touch

The covering of the body is called cuticle
no arteries nor nerves are discern'd in it -
it possesses sensibility without irritabil-
-ity - it protects the extremities of nerves from injury -
2nd Beneath the cuticle and connected with it,
is a soft pulpy substance called Rete
Malpighii - it is like coagulated Mucus -
It may be seperated from the cuticle -
3rd The true Skin lies below this - it is
composed of thick cellular net work -
4th Connected with the true skin are sweat
glands which go to the cutis - also sebace-
-ous glands from which issue a kind of
liniment - 5 the hair comes from beneath
the cellular substance, and originate from
a bulb - arising from the bulb the hair
perforates the cuticles and carries a sheath
with it - 6 the cuticle or true skin, is not con-
-fined to external parts in urethra, bowels,
mouth of the vagina -

7th Sense of touch is influenced by blood vessels which accompany the nerves — sensations are more or less ~~acute~~ acute according to the tension & fulness of the Blood vessels — excepting in the sense of touch which is improved by fasting — in this case it is said there is a diminution of the stimulus of the blood — the sensibility of parts is influenced by the quantity of the Blood accompanying the nerves, as the breasts of women, the lips &c & I said formerly that different senses were supplied with different nerves — glands have different nerves — I shall often speak of transition of specific sensation —

8th the extremities possess the faculty of distinguishing substances as to their quality — better than any other parts — by their smoothness — the nerves at the ends of the fingers — are preserved by the <u>Nails</u> —

10th
with
one
more
shown
shown
become
the
this
I tra
gun
dire
The
are
in
The
bang
acc
by
of
any

10th — To increase the sense of touch it is wisely distributed through four fingers and one thumb — the sense of touch is thereby more correct — the temperature of the fingers should neither be cold nor hot — the brain should be regular — The soles of the feet become insensible to common impressions — the lips possess a high sense of touch — this is obvious in children —

I have read of persons who could distinguish every card in a pack merely by the sense of touch — to render it acute — the Brain should be preserved from injury — it is more acute in darkness than in light — it is increased by putting the hand in warm water — and by rubbing the fingers on a rough body — accuracy in the sense of touch is acquired by habit — To this sense we owe our ideas of primary qualities of bodies — the Mind originates in the sense of touch —

The Foetus in the womb possesses this sense – abortion is often produced by it we place more reliance on this sense than any other —

## Sense of Taste

This exists in the tongue – the following particulars belong to the tongue —

1st the tongue abounds with Blood vessels, nerves, lymphatics – I have heard of a tongue half white, may it not be placed on a footing with seeing and hearing on account of its structure

2nd this sense is excited in the tip and edges of the tongue; the palate and fauces distinguish some objects of taste — Belladona affects the palate and wormwood to Oesophagus – 3 the nerves of the tongue project in small papillae accompanied

4th the tongue is supplied with nerves from the 5th 8th & 9th pair

5th th
which
master
6
7th
8th w
9 obje
bitter
9-al
fied
ins
10 th
otan
this
otan
Chan
this
the
the
the.
fied
defo

5th the tongue abounds with Blood vessels, which pours forth a liquid to assist in mastication —

6

7th it differs in sensibility in different ages — it is most exquisite in infancy —

8 objects of taste are various — sweet, sour bitter, saline

9 — all tastes are excited by solution of solid bodies — by agitation &c metals are insoluble in saliva —

10 this sense has some variety — some substances ~~occasion~~ ondulations of the nerves this sense is influenced by various circumstances in the tongue — as the state of air, changes of saliva influence this state — this sense is influenced by odors passing thro' the nose — by fullness or depletion, the the former is favorable — I knew a physician who took a purge the day before going to a turkey feast — ?

in order to eat more — the taste of wine is improved by cheese — the perfection of this sense is influenced by habit — cold deprives sapid bodies of the power of exciting the sense of taste — this sense may be transfered — in some animals it resides in the stomach — there are different nerves for different tastes the sense of taste is not independent — it is connected with the sense of smelling — the sense of taste directs us to the choice of aliments — There are as few primitive tastes as colors — From its abuse with civilized people, it is most enjoyed by savages — Tastes are supposed by some to be 16 in number — those animals in which the sense of taste does not reside, have it in some other part —

Nov- 24th

High seasoned food is to the stomach what the color, red is to the eye — —

## Sense of Smelling.

This resides in the Schneiderian Membrane - The extent of this is to the Ethmoid bone — in Animals which possess different degrees of smelling, the size of the frontal sinus is different —

in the act of smelling — air is discharged from the sinuses — pungent substances do not pain the membrane of the sinuses —

1st it is greatest in Children

2nd In no position do the sinuses discharge

Moisture 3rd The mucus lining the inside of the nose is deposited in the crypts of the nose — Moisture is indispensable to the act of Smelling —

there is a great variety in the sensations of ODOURS are var

each odour has a specific sensation — specific nerves — there occurs Error Sensus here as in other senses — the nerves which the sensation of emits pleasant odors, sometimes loses its specific sensations and emits the sensations of Foetid Odors — and vice versa every sensation has its proper nerve — This sense is more universal than the sense of taste — it begins in early life the nerves for this sense are larger than those of the organ of taste — no taste is sensible in an animal in whom the Aspera Arteria is cut — when we wish to smell acutely we imitate the greyhound, by making quick and short inspirations this sense is rendered more acute by shutting the mouth — The object of this sense divided

Ambrosia, Musk

Fragrant, aromatic, alliacious, foetid

all
my
Sum
Show
Mar
to b
a v
obtu
fut
Cro
Bd
-co
it. I
fer
the
pro
the
dul
Ch
Fin
Ber

all odours combined from Primi-
-ry Odours – The sources of odor, is more
numerous than is supposed – they
should be in a gaseous State, the
matter of odors acting on the nose is too
to be perceptable – 1 Gr. of Musk scented
a room 20 years, the urine of a
skunk pervaded a whole township –
putrid odors adhere to garments and
produce fevers – the great extent of
Odors is proven by birds being allu-
-ed several hundred miles to barron –
it has been denied that malignant
fevers are produced by miasmata –
this sense is tributary to the eye – a
proof a proof of the connexion between
the eye & nose, is evident in pungent
substances exciting tears – –
The uses of smelling are 1st To dis-
-tinguish substances 2nd It has been
known to convey nourishment to

the b
betw
act
ven
num
of th
and
sens
the
als
app
It is
with
-ber
ling
the
for
acc
acc
the
acc

the body 3rd it discovers the connexion between diseases - 4 Medicines which act by this sense, remove acute and sud-
-den diseases 5th Odors influence the mind - Rousseau calls it the organ of the mind - its effects are more quick and numerous, than from any other sense 6th It influences morals - by the smell of Sulphur - pleasant mor-
-als influence Days - Lastly the long application of Odors - brings on fatigue
It is happy that our smelling is connected with respiration - by it we are often pre-
-served from disease & Death, by enab-
-ling us to retreat from deadly smells the eagle and vulture ascend to the air for the purpose of rendering this sense acute - the hog possesses this sense acutely - he smells domestic objects - the deer forsakes his pursuer by his acute sense of Smelling -

The
expra
of pre
an T
volu
alaa
heav
They
am
of ch
rate
as c
hose
Pac
me
wh
two
in
in
m

Novr. 25th

## Vision

The greater the darkness the greater the expansion of the pupil. we have been told of persons who could read in dungeons — all the motions of the Iris & pupil are voluntary in man. the pupil is generally dilated in chronic diseases — The Indians have Black eyes in the north of the US they are not the Aborigines — The Esquimaux Indians have the same as those of N. America — objects are inverted on the retina — Men couched for cataracts see as we do after the operation — "The inverted position of objects on the retina is necessary — Paterfield on the eye — the right eye is used chiefly in vision — vision is less true with one eye in distance and direction than two — acuteness in vision is more perfect in one eye than 150th — Vision is much indebted to the sense of Touch —

A young man recently couched by Cheselden thought that every object touched his eye - the color white stimulates the eye most

a large proportion of stimulus which supports life, is carried to it by means of the eyes - the size of the pupil, discovers the state of the brain in most diseases - a figure and action of the eye indicates the action of the faculties of the mind - why do we feel pain when brought from a dark room into the light? because the rays of light act sensibly on the retina - the evidence of reason is called seeing - How limited would have been our ideas of objects without this sense - the eye is the masterpiece of the Soul as it were and the master piece of the human frame - to preserve the eyes in perfection, it is necessary to keep it is necessary to keep them fixed in the orbits so that the muscles will not be stretched - In reading a book we should incline it - the light should be received over our back or sideways -

and
ligi
in re
-ent
for
-ula
The
mis
-fro
imp
Cyc
ros
Bai
fro
the

1st
-ture
the
-ac
The

and not anteriorly – do not read by exposing light – we should change the size of the print in reading books – do not read in an incumbent posture – reading in open air is injurious for the light is too intense – never look perpendicularly on a book to read – avoid pressure on the eye when you wash face – vision is improved by blacking the eyelids. vision is improved by examining beauty, colors &c It is improved Spectacles when weak – where the eyes are weak, read & write before day — vision is sometimes revived in old age – it is said to be owing to an effort of the System to produce antediluvian age – Human life before the deluge was on a footing with vegetables –

## Hearing –

1st of the nature of sounds – 2nd of the structure of the ear – Sounds are the vibrations of the air in the ear – By sounds I include musical tones – By noise the sounds of explosions the earth as well as the air is the vehicle of noise –

her
quar
ciee
was
hocu
I hav
electi
the a
Head
not
mor
ones
hear
this
betto
wh
-nor
me
to
no
Ro

When I attended the battle of Brandywine — a quarter of a mile between camps a large piece of ground was covered with dust, which was produced by percussion — Sounds of cannon produce percussion in the earth for many miles — I know a lady who can hear the ticking of a clock but who cannot hear the report of cannon — the deception of ventriloquists is owing to their speaking during inspiration — Hearing is not independent — but owes somethings to the nose for its perfection — we hear better after sneezing — it owes something to the eyes — we hear better by looking steadfastly at a speaker — this sense is indebted to the mouth — we hear better with the mouth open — we hear better when breathing is suspended — more numerous rays are collected by it — Ideas by means of speech are conveyd from the ear to the mind — the sense of Hearing is sometimes translated

Haller mentions a man who could —

Haller mentions a man who could distinguish the sound of a drum from all others - it always produced a hair in his belly - and intimate connexion subsists between the ear and voice - I knew a woman who could distinguish the taste and color of substances with her ear as well as I could with my eyes - some people that deaf can hear when riding over stones - this acts only by giving more tension to the membrana tympani - the ears are more faithful in conveying Ideas, than the eyes - who hear imperfectly when growing owing to the temporary imperfection of the Eustachian tube -

Advantages of the Senses combined -

The senses combined form a large proportion of the stimuli of animal life - we are indebted to the senses for our minds - without senses we should be below the brutes - Ideas are the offspring of sensation - and without the senses there is no sensation - Nihil est in intellectu quod non prius fuit in sensu — There is nothing in the understanding which did not

get there by the senses - the fewer and weaker the impressions, the more feeble is the mind - a gentleman who died some time ago - on making his will valued his eyes and ears at £10,000 each. How often our senses deceive us I shall show you

1st Many things which are called ideas are false - 2 from the perceptions we acquired by habit, as handling heavy things in infancy. 3 Ignorance of the laws of Nature - as the vulgar opinion of the portion of our globe 4 Diseases of the senses - I wish you gentlemen to attend to the senses dependence on each other - children reason better than Philosophers - the original connexion of the senses with reason is obvious - therefore I say in the language of the Episcopal Church - "that God hath joined, let no man separate" the sense of touch is necessary to correctness of seeing & hearing -

# The operation of the Human Mind —

1st The knowledge of this is the noblest acquirement the mind of every man constitutes his Identity —
2 The history of the faculties is the most certain kind of knowledge — it consists of facts and relates to actions —
3 it is an intelligent science — The bones of the head are not more capable of demonstration than the faculties of the mind.
4th It is the most useful of all sciences. it is useful to the Statesman, the divine, the physician &c many diseases cannot be cured without a knowledge of the Mind.

Novemb. 28th

## Enquiry into the Human Mind —

I proceed first to consider the Nature of the Mind. 2d the faculties of the mind. 3. the operation of the Mind — Under the 1st Division I remark that there are many opinions — 1st That the mind is immaterial. This ancient and almost universal —
2nd That there are but two parts in the human being — Spirit & Body — I believe that Spirit is is matter exquisitly refined & connected to the

Brain in a juxta-position 3 that it is a germ or seed lying dormant in the brain 4th there is no such thing as mind material or immaterial, but is the effects of impressions made external or internal on the brain

There is no necessary connexion between immateriality and immortality – Spirit supposes no existance – it is immaterial – the faculties of the Human Mind are Instinct, Memory – Imagination – Will – and Passions – The Mind is an unit, but is moved by its faculties – the moral and intellectual –

The more arched and elevated the skull, the greater is the intellect – of this – Man possesses most of all beings – the Elephant next – and the goose least – Instinct differs from Understanding – the last is a native faculty of the mind –

Instinct is the effects of impressions made before birth – it only declines and is never lost –

Memory sometimes supplies the place of instinct — I will give you the different opinions on Phrenology or the Doctrine of the mind —
1st It is supposed to be matter capable of exciting existence separate from the body —
2 — The germs of the Brain contained rudiments of the mind similar to the present mind — it is indestructible and will unfold itself at the last day when it will unite body & mind
3d — There is no such thing as mind material or immaterial — this is as much the effect of organization in the brain as vision is effected by the eye — St. Pauls argument in favor of the Resurrection viz that seed cannot grow except it die, is incorrect — the seed does not die — it is the capsule only that dies and furnishes the first aliment to the plant — 4 That the mind is wholly immaterial — this was held by Plato and Cicero — it is maintained by Ferguson, Price and most divines —

Mr Bruce thinks we consist of body and Spirit only — what is called Soul is nothing but what I call, Animal life — Mr Fay died in the belief of Spirit inde — pendent of matter — There is no necessary connexion between immateriality and immortality — To suppose that Spirit is necessarily immortal is to suppose God stripped of one of his divine attri — butes — We cannot admit that matter is independent of thought — Van Sweiten quoted — A sleeping ~~ga~~ State in the grave of 300 years duration will not appear more than a moment to the mind — the Spirit will be insensible to the lapse of time — I believe in the im — mortality of the mind — The History of the mind I am about to deliver requires us to believe it acted on by the body and the latter acted on by the former —

The Faculties of the Mind —

I call them so in conformity to custom — Waller calls them internal senses — their operation is the effect of specific motions. The faculties have been divided into active and passive — I do not admit the divisibility of the mind into parts — It is an unit — many phenomena make it appear that each faculty is seated in a different part of the brain in a healthy state.

Dr Gall supposes the Brain to derive a specific intellectual and moral nature from the author of the Universe — I have said the mind and body of man were formed at once. The first impulse of the blood sent to the brain awakened its faculties — The mind remained quiescent until it pleased God to breathe the air into man's nostrils — if a microscope could be applied to the brain in a healthy state, I believe every action of the mind give a motion to it.

if the microscope were directed still further, I believe specific motions could be perceived — if there were no specific motions all thought would the same — The membrana tympani is 100,000 times less than the brain, yet it produces 500,000 different motions — We think involuntarily because our thoughts are produced by the causes which excite life —

Instinct is intended to supply the place of the faculties which belong exclusively to the human species in the fœtus it is the effect of impressions made in the womb by the meconium — perhaps this is the final use of the meconium — Instinct differs from understanding in being the effect of impressions made before birth — Instinct never dies in the human species — it often supplies the place of the Intellectual faculties —

next to Instinct succeeds Memory — this is a wonderful faculty — it is the most necessary and useful of all — Hartley justly says there can be no mind without it —

November 29th 1809 —

Memory often supplies the place of Instinct — The lowest grade of memory is Reminiscence — A child six months old recognises its mother when it sees her, but if absent long forgets her. many of the objects of memory exist in a present state — they are called in by the will, and are formed into Ideas — about the 3rd year of life we begin to remember — says Shakespeare — there is no such thing as oblivion of events of ehildhood — in the first years of life the memory, the memory is employed in words and signs — we learn more says Gregory in the first 3 years of life than in 30 years after — We learn a language ~~in three~~ years; a child learns

quantity, magnitude, numbers, tread, odo, plea-
-sure, pain in Byeers - Gregory is correct -
the extent of memory depends on civilization -
Indians have bad memorys - when they sit
down to hear a speech - the first on the bench
remembers the first few sentences, then jogs his
next neighbour who also retains a few lines -
he jogs a third and thus certain parts of the dis-
-course being retained by each - in order to answer
it - they all retire together and one takes account
of the whole - Memory is a generic term -
there is a memory for places, faces, words num-
-bers - Ideas &c - each of these is supposed to hold
a different seat in the brain - each may be
injured by diseases - It is said that Dr
Whitfield never forgot a face - he had a good
memory for all things - A memory for place belongs
to some animals besides man - it is very advan-
-tageous to the mind - Children possess from Nature
and Players from habit - A memory for words
some persons are able to repeat a whole sermon after hearing it

Here
is an
any
numi
is a
of the
the c
name
becau
Prud
call
of the
or fa
Mem
restr
the
revo
Amr
recu
is m
tion

There is a memory for names. This was possessed in an eminent degree by Cyrus - there is a memory for numbers - a certain man could tell the number of words in a discourse, on hearing it; there is a memory for Ideas this is the highest grade of this faculty - it distinguishes the savage from the citizen, the lack of memory is called Amnesia. names and words are soonest forgotten in Old age because they are arbitrary - Linnaeus was a Prodigy of memory - Imagination is called the representative Faculty - it is the pioneer of the Human Mind - in recollecting ideas past or future - there can be no imagination without Memory - it is a Christopher Columbus with respect to its power of discovery - it assails the heavens, and explores the worlds that revolve round the earth - It encroaches on Omnipotence itself - Ideas of Imagination are received from the eyes and ears - Imagination is necessary to Genius - There can be no Imagination without it -

Is there any difference between Imagination and Fancy? I think there is — Fancy occupys itself about Fantasms — Imagination concerns itself with realities — Understanding is essential to the Human mind — read Locke — internal and external sensations combined from Ideas — It is this directs the pen of the poet — it gives to airy nothing, a local habitation & a name — without Imagination the mind would be nothing but a toy shop — Imagination is compared to the rudder of a Ship — Memory and Imagination furnish the raw materials as it were for a house — Will, this propels us to pursue good or avoid bad ~~objects~~ — it has two offices to perform it embraces truth or error thro' the understanding it embraces moral good or evil thro' the Passions Voluntas facit pecca, the principle of faith appears early — it is deep seated and universal I consider it innate as Imagination. it has been defined "the evidence of things not seen" I say not felt, heard, tasted &c —

if we
our
it w
we w
or fee
His
not n
more
It is
aequ
//
Sir
Sir
hafs
good
with
dins
bow

if we had not faith in those who put up our medicine we would not take it fearing it was poison – if this faculty was suspended we would be as bad off – as if deprived of vision or hearing – all Society would be destroyed This principle is a law of Nature and does not result from experience – it is a better and more faithful source of Knowledge than reason – It is an involuntary principle – the knowledge acquired by it is the most certain – the –

Passions of the mind come next –

Nov 30th 1879

Of the Passions of the Mind –

The passions is a generic term – they are 1st passions properly so called – 2 Emotions – the passions so called have for their object future good or evil – all the objects of the passions act with the will – Motions are succeding impression of the Passions producing motion in the body – they are generally produced by –

present good or evil – Emotions are a high-
-er grade of passions – the moral passions a
calculated to excite certain impressions only.
they are innate – their aptitude to specific
impressions is as great as that of the eye – the
moral faculty is as necessary and as universal
component of the mind – as memory or imagi-
-nation – it exists in some persons in an im-
-perfect state – Locke says we are not
born with moral capacities – the reverse of
this is true – it has been sometimes ~~been~~ con-
-formed with the sense of Deity & conscience –
Conscience performs the office of a judge –
the moral faculty differs from both in deter-
-mining on the morality or immorality of others
Conscience judges only of our own actions –
The moral faculty is sometimes absent while
conscience is present. Sense of Deity – By this
I understand the sense of a good and Intelli-
-gent Being – it is universal among Savages
as well
and civilized nations –

This
clear
profe
deve
creat
ary
men
but
Gene
state
it d
the
State
caus
especi
the
in
the
non
not
the

this faculty distinguishes man in a particular manner from all other animals, they possess conscience but none of them shows a sense of a supreme Being — Man is a creature capable of Religion — he is as necessary a religious as a living being. some men have denied the existence of a God. but they really believe the contrary at the same time — it sometimes exists in a torpid state — suffering acts on this sense when torp it sometimes exists in a perverted state — The sense of Deity is in a sound or unsound state in proportion as the sense of a first cause appears — this sense would never have appeared but for revelation — without it the sense of Deity would have been a void in man as in brutes — Conscience is the next faculty — 1st Regula regulatur non regulans 2nd it regards our own action not those of others 3 it is never absent from the mind except-

4th it is seated in the understanding - it does not regard the action of memory except in a few cases - it may be compared to a high court of errors and appeals

Conscience is derived from from the latin Con & Scio to know together - the operations of our intellectual faculties are slow and uncertain - that of the moral faculty is swift and certain - some have supposed the moral faculty to be a modification of the intellectual faculty - truth has but one front - all the faculties act by a specific stimulus - Speculative truth is the object of the intellectual faculties - right and wrong are objects of the moral faculties - our moral faculties act with instinctive celerity - so that an unlearned man may be as honest & happy as a learned man - we cannot perform our offices without the action of conscience it is to us like mentor to Telemachus - tho' it is a judge it is our friend

there
the
supp
version
cation
in p
by a
transl
defen
or th
it ha
Gnee
tru
are
here
the
the
the
the

there is as much philosophy in supposing the spirit of god to act on the mind - as to suppose that light acts on the eye in producing vision - the faculties may be improved by education, so as to increase our happiness, but not in such a manner, as when they are acted on by divine influence - the senses are sometimes translated, this will apply to the faculties - I define taste to be a sudden perception of beauty or deformity in the works of Nature and art - it has been mistaken for judgement -
Intuition consists of prompt perceptions of truth and error - all the faculties mentioned are tributary to each other they should bear just proportion to each other - let us suppose the memory and imagination to be a House of Representatives - the Understanding is the senate - the will & the executive officer the passions are the Deputies of Executive - the moral Faculties are a court of Justice -

the Practice of swearing by ~~by~~ oaths is the Sense of Deity — conscience is the high court of errors and appeals — such a government resembles a wise man. Governments are only in proportion perfect as they accord with the Human Mind

The operations of the Mind are Perception, Association, Judgement, Reason, Volition — thus they take place in the mind the precise order of volition cannot be fixed — it acts after or before the rest — Perception this is sensation excited — by perceptions objects are identified — I hear a sound like one I have heard before — I know by habit and memory whether it is the sound of a brute or man — Perception is seated in the Understanding — the change occasioned by act of perception, is to produce Ideas — Berkley says there is nothing but Ideas in the world Dupont favored Materialism — Hume questions the existence of matter & spirit combined —

The excitement of the mind depends on the action of Stimuli

} divide perceptions

1st into Ideas properly so called – 2nd all knowledge of things not sensible and thoughts – Ideas are the effects of motions excited in the brain and communicated to the mind – similar impressions excite the same Ideas – How do we renew Ideas – It is by association – by an impression or some other part communicating that impression to a part distant – from that part where the impression was originally made – impressions on the mind thó in old people are not capable of reproduction brutes have only reminiscence because they do not speak – the explination of Ideas applies to thoughts – thoughts are combinations of Ideas – Ideas are raw materials – from which the mind manufactures thoughts Ideas occupy no space – they are totally dependent on Stimuli –

Association is called coherence of Thought
It is the operation of several faculties united
it is to Mind what Sympathy is to the body —
it consists in a single Idea exciting a certain
number of Ideas which unite together —
we are as unable to stop the current of thought
as to arrest the course of the planets —
this faculty is as necessary to the others as
wind and water to a mill — We cannot
think of spring, without thinking of the sing-
-ing of Birds &c the verdure of the fields trees &c.
the recurrence of the objects of the mind by
association of Ideas is the cause of what have
been abstract Ideas Scholars would be
easier taught by those who were acquainted
with the mind — we acquire a love of study
by thinking of the reward attending it —
Blood letting is abhorred because the shed-
-ding of Blood is connected with murder —
Bounties feel the influence of association

2 Mors
offean
not
by 1
specc
4th
3rd
bere
by
by
Canc
Bräu
y h
alm
Dr
6.
Reo
Bruc
Ame
of an
he
Ro

A horse is afraid of a drum - but feed him often in a tub placed on a drum - and he will not run from it - Association is influenced by 1st Place - 2nd Time - Christmas day associates with it the events of that day - 4th of July &c. -

3rd Pleasure - a graceful speech is remembered better than an ungraceful one 4th Pain as whipping a boy at a land mark to make him remember its situation - Mothers do not forget the pains of parturition - hence they have been called almanacs -

Dec 1st Friday

Dr Clark says a man who wishes to become eminent, must not only read much, study much hear much - but write much - Thus Dr Priestly became master of an important subject that is by writing he committed what came in his mind to paper - The eyes in writing increase our

knowledge, by association – words related to events are lasting and produce great effect words in sound create association, certain abstract signs addressed to the eyes, create association, as a knot tied round the finger Particular sounds produce Association of Ideas – As the sound of a cow bell – on hearing it we think of a cow, milk &c – Odours act powerfully in producing ~~sensations~~ Association to does interest – likewise the ties of consanguinity produce Association of Ideas, as the sight of a family by a fond parent – custom and habit produce Association – A gardener when travelling – on seeing a fine spot of ground is apt to say, such a place would make a fine garden – A Soldier marks out such a spot for an encampment – General Moreau when riding near Germantown for the first time, was often heard to say, such and such a place would make an excellent situation for a camp –

It is of importance for a physician to attend to these matters —

Mr Hume call man "a bundle of habits," if by habit he meant associations he was correct — judgement is a perception of the similarity or dissimilarity of things we distinguish faces by judgement only The operations of the mind go further A frazier in this city can distinguish the cattle of every country in this state, at first sight — judgement sometimes does not exceed the limits of experience correct comparison is called discriminating judgment — that which in us is perceptions is judgement in children — the judgement acts as necessarily under arguments — as the senses act by impressions made on them — Reason is a more exalted operation than judgement — it is the highest intellectual operation of the mind — it is connected with correct

perception - related association and sound judgement, in its highest state - but it may be connected with unrelated associ^n and unsound judgement. Reason differs from Genius - the course of the former is in order that of the latter is irregular - Genius is Reason with wings and Reason is Genius on foot - Reason, with reverence be it spoken, does not belong to God - the minor operations are attention, reflection, contemplation and wit - Reason avails itself of the relation of facts to each other, of which it had no experience - the word reason is derived from the latin word ratio - it places things say Butler, that are confused in the understanding, in the regular order of Nature - Reason possesses a creating power - it acts as the refiner of raw materials Judgement is regulated by experience, Reason by analogies - by the acts of Reason, we infer there is but one cause ——

men of correct association without judgement often dazzle the world, brutes associate and judge but men only reasons — Intuition most commonly appears in Generals & Merchants and Sea captains — Intuition is a higher grade of genius — Reason, Genius & Intuition form a scale of which intuition is the highest: Common sense is a quality of vulgar minds, wise men sometimes use it but only occasionally It is more correct in common people I refer you to Moral and philosophical Essays printed By Bradford —

Adam lived before the fall without reason he had no call for it, he acted by an instinctive genius or intuition —

Attention is her continued application of the mind to one subject — Reflection is the continued application of the mind to more than one subject Bacon Locke &c were contemplative men

Reason is refined judgement — Taste seldom awakens before a adult age — as the senses are the avenues of knowledge — we should

teach children in this way - the first thing that Adam was taught, was natural History - we should begin with teaching children Geography - it much better than filling their minds with latin and greek - let a boy be taught the modern languages - I am not opposed to the study of the latin and greek languages As the operation of judgement and reason takes place at 20 - teach the sciences at that time, not before, there is not a boy of 15 years old that is fit to read latin - he can learn no more than English words in the latin language - the faculties of the mind decline as follows - the memory declines first - there is a memory for names, for places, faces, Ideas, words, - these decline in the order laid down - the imagination fails next - next the understanding - the faculties decay in order - I never saw the moral faculty and sense of Duty weakened in old age, in a religious person - - -

the mind decays, as the nerves lose their power of transmission of impressions —

Contemplation, is the application of the mind to a variety of subjects — Men of limited minds are attentive — Wit is defined to be a sudden assemblage of Ideas without resemblance to each other — the pleasure arising from this passion, are owing 1st to the impression of truth — 2nd the impressions of novelty — Wit gave to Dr Franklin much pleasure but not laughter —

## The operations of the mind

The first thing we shall state, respecting the mind, is its ability to attend to more than one thing at once. a woman can walk and knit at the same time — Does the mind act from necessity or freedom? Philosophers, in this question are divided. Mysticism of animal life is calculated to explain it all the actions of the mind are the effect of stimulus. The mind has no self determining power free agency is the result of reaction in the mind

As animal life ceases to act, on the abstraction of stimuli, so the will ceases when motives are abstracted from the mind — Free agency is dishonorable to the Deity — it places the creature above the Creator — this view of the subject is by no means unfriendly to morals and religion — it is actually the basis of them — it places the Deity on the throne of the universe — as in the animal body in a healthy state, we have no sensation of stimuli, so in the will, we have no sensation of the impressions acting upon it — when we act most free, we act necessarily and when most necessarily we act most free — — —

Dec — 2nd

Consciousness differs from Conscience in embracing that kind of knowledge which we have of our own existence — it has been said, that because we think therefore we exist — consciousness is sometimes lost in Hypocondriasis — the sense of our existence is a simple is a simple perception.

we are conscious of the lapse of Time, only, from the recollection of our Ideas, Maniacs lose their consciousness - in sleep we lose this consciousness - as in dreams - this lapse is the cause of morbid excitement - Consciousness of personal Identity is more perfect in proportion to the number and perfection of our senses - it is lost in dreams by supposing we are what we are not -

The operations of judgement commence in youth Reason acts in ripen age - Dr Franklin exhibited no decay of his moral faculties - in the 74th year of his age - constant exercise of the mind strengthen it, as agility does the extremities -

I hope I have rendered the study of the mind somewhat important, and easily of comprehension as the bones of the head - before I dismiss this let me recommend the study of the faculties - to your serious attention - - It is necessary to a physician - this study requires no books

Nor, like the body, does it require dissection
It is itself a little world – Globes, earths, suns and
planets, are nothing in comparison with the mind –
In the gift of Immortality, Man is on a footing with
his god –

Comparative view of the mind of Man, with that of
Brutes –

Attempts have been made at this comparison –
1st It is said that man is a sociable being – so are
all gregarious animals, 2nd Man is said to be
an anticipating animal – so is the beaver –
3rd Man is said to be progressive in knowledge, of
the generations of men this is true, an old horse
is more sagacious than a young one –

Difference of Mind in Brutes –
1st It is admitted that mind is in proportion to
sensation – brutes are limited to the senses of seeing
tasting, smelling, hearing – they have the sense of
touch in a coarse degree. they are inferior to man
2nd the brain of man larger in proportion than in
Brutes – 3rd the impression on brutes instead

of falling (faculty) on their mind, fall on their limbs.
4th Brutes have no speech — here they are ma-
-terially different — 5th they are inferior to man
in mind & knowledge for want of fingers —
6 They have no signs nor monuments to
perfect their knowledge — 7th they are inferior
in mind to men from the limits of their
objects of knowledge — the more men limit their
studies, the more are their minds contracted —
they then become on a level with Brutes —
8th Brutes have istinct, more perfect than in
man — 9 Brutes have reminiscence — they
recognise roads — they have little memory
they are devoid of imagination, they have little
understanding but some passions — 10 Brutes
appear — to possess moral faculties — hence
we speak of a faithful horse &c
They often show shame — hence I infer they
have no conscience — no sense of Deity —
This sense constitutes the difference between
men and Brutes — Man is necessarily a religious being

11th Brutes perceive associate and combine — they have some judgement but no reason — it is impossible they should have reason, they have not the means of it — they have not enough memory — they are incapable of abstract Ideas — 12th Brutes are governed by present pleasure or present pain — this is the reverse in Man from a view of these differences, it seems that the faculties of brutes and men differ in degree not in kind — Dr Hartley —

Men live unreasonably with all their reason Brutes live reasonably without reason — We might learn something by enquiry into their future destiny — some suppose them destined to immortality — it is because god has been pleased to limit them — if we are immaterial they are — we are not immortal merely because we are said to be immaterial — we are immortal because the supreme being has pleased to make us so — In reviewing the lectures of some days past — I am naturally led to the reflection —

that I have advanced sentiments, which were
meet much opposition — I have been exposed
in my little bark — and I hope I have made
a safe arrival — I think I see you hail
me from the distant shore —

I'll join your welcome on our peaceful shore
My voyage ended and my perils o'er —

Dec - 4th

## Of the Sources of Pleasure -

Since the loss of Primeval innocence, pain is the natural state of man, but there is a great predominance of pleasure over pain throughout life - every thing, except the mother and milk is painful to a new born child - the impressions of music are even painful - Pleasures resemble animal life - I shall enquire

1st into the pleasures of the senses and mind - 2nd into that state of the nerves in which pleasure consists, or in other words, the proximate cause of pleasure - many of the pleasures of the senses are important articles of the Materia medica - most of the cures said to be performed by Nature, in chronic cases result from pleasure - I shall consider pleasure as an Unit -

### Pleasures of the Sense of Touch

The pleasures of this sense are said to arise from the easy and natural order of the different secretions -

the absence of Pleasure produces pain — the next pleasure of the sense of touch, results from the Commerce of the Sexes — 2nd from the propagation of the species. 3 By contact of the lips as in kiss-ing — this source of pleasure is accompanied by a certain degree of temperature on the body — a sheep seems to delight in the shade of a tree in a warm summers day — the surface of the body is an extensive portion of the surface of touch — on this account the Nit: Oxyd: produces exhilerat-ing effects — but contrary to a common opinion it leaves the system languid — this was proved by Dr Stock — Dr Woodhouse relates its wond-erful effects in his edition of chapter 4th The pleasures of the sense of touch arise from the use of the warm bath, the warm bath contributed much to smooth the declive of life in the late Dr Franklin 5th a fifth source of pleasure from this sense which arises from those actions, which are pleasurable as Sailing, Hunting &c the chase is a peculiar source of pleasure — this is enjoyed in cold

weather, no exercise gives more pleasure to some people - perhaps the pleasure of this amusement is owing to the echoes of the Horns, the yelle of the Hounds from the neighbouring mountains - the pleasures of Hunting does not arise from competition - from jumping ditches, leaping High fences &c perhaps it is owing sometimes to the reflection of the Hunter, of having escaped with whole bones - the pleasure of Sailing in a balloon, as Mr Blanchard told me was very great it raises the pulse considerably - Motion or exercise is absolutely necessary in children -

6th a sixth source of pleasure, results from the operations of certain medicines on the body - the alimentary canal. I consider as a part of the widely extended region of touch - Pleasure is derived from, sudden ease after extreme pain - thus in women after delivery - they often declare they seem as if they were in Heaven - patients with gout - derive great pleasure from the sudden cessation of a Paroxysm - Humboldt says -

he derived great pleasure from getting out of the way of musquetoes & pleasure is derived from the application of soft substances to the skin as down velvet &c – Some people derive great pleasure from a feather bed, & certain titillations on certain parts give some people pleasure as touching the palm of the hand – to many persons derive pleasure from certain Idiosyncrasies 11 there are Hermaphrodite pleasures as riding in a sleigh – this pleasure is the effect of a combination of the sensations of the cold & the motion of the sleigh – 12 pleasure arises in some people, from darkness and silence – here perhaps the Body is in a morbid state 13 the intermediate state between the sleeping and waking state, is a source of pleasure 14 Scratching heads is a source of pleasure to some – I have heard of ladies who would sit whole hours to have their heads scratched – tho' not a louse could be found –
to the history already given I add the bodily pleasure sometimes attending Death – I have witnessed

instances in which persons felt no pain in dying — Dr Wm Hunter when dying, said it was a pleasant thing to die — Genl Butler of St Clairs army — said it was no hard thing to die — I saw a person laugh 3 or 4 minutes before Death — he was naturally of a lively disposition — thus far I have considered the pleasures of the sense of Touch — motion is in some degree necessary to pleasure in this sense —

## Pleasures of Taste

Eating and Drinking are sources of Pleasure to this sense — this sense is of a relative Nature it is varied by hunger and habit — hunger renders coarse food agreable — habit renders agreable things not desirable — Nature abounds with objects of this Sense — art has discovered many which increase the pleasures of eating and drinking — the Nicest viands become nauseous by habit — I have suspected aliments to have the same relation to each, that sounds have — the richest food pallas the appetite by habit after recovery from sickness the pleasure of eating is exquisite —

## Of the Pleasure of Smelling

Every region of the world is tributary to this sense there appears to be a scale of objects for this sense, the rose is the highest, next, the lilac, violet, shrub &c Fragrance Odors give more pleasure after footed – Pleasure from Odors is increased by mixtures, the pleasure of the smell from flowers is the greatest in the morning dew. the fragrance of flowers increased by transplanting them from a wilderness to a garden – the sense of smelling may be prevented – some like the smell of musk &c. Foot Ambergris ~~&c~~ The smell of flowers if vegetable are medicinal – hence the benefit derived from the country air by invalids –

## Pleasure of Vision

To estimate the pleasures of light, we may read Milton – the delicate Tint of the moon is more pleasureable than the Sun's ~~to~~ most people the Eclipse of the Sun in June 1806 excited pleasure – variety of colors affords pleasure blue in the Sky, green on the Trees are alike agreeable to the eye, the plumage of birds is delightful – yellow with grey is the color which gives

most pleasure - if you present an Indian with a coin of copper - of gold and of silver he will invariably chuse the gold one - colors like sound are related to each other as in the rain bow, Dresses according to their color either offend or please the eye - Hogarth says the greatest pleasure is derived from Beauty - the human figure is the handsomest form in Nature - that pleasure which arises from beholding a human figure, wether in a male or female, is not the greatest - it is pleasing to behold a well shaded picture - the next animal to man in beauty is the horse - Rivers, mountains &c are pleasing to the eye - we derive great pleasure from viewing objects in motion, as the waving cornfield, the nodding forest, and the rolling waves — "Joshua Reynolds calls a bad education the school of deformity". Height and Magnitude are sources of Pleasure - the balloon gives pleasure by its height - combination of color with magnitude and height are sources of pleasure. as a cloud

tinged with shades - contrast in objects is a great source of pleasure - the pleasures of this sense are relatively connected -

## Pleasure of Hearing

We are deceived as to the pleasure of this sense the Human voice affords pleasure - public Speeches often charm more by their melody than their Eloquence - a volume might be written on this sense - I have now considered the pleasures derived from the various senses, and recommend them to your candid attention - I consider the body of man as a violin - his senses I compare to the strings, Every thing that is sublime in Nature is the bow - the Supreme Being is the grand mover of the whole machine -

Dec- 5th

Proximate causes of Pleasure

the suspension of one sense increases the powers of another - motion is essentially necessary to plea-
-sure - The objects of all the senses excite motion
Pleasure consists, 1st in a certain definite and lim-
-ited degree of impressions 2nd in a certain regular order of motion - The pleasures of taste and smell are of the shortest duration - To render the above observation plain I must speak of the causes of pain —

1st causes of pain are distention to a certain degree 2 a certain degree of contraction in parts previous-ly irritated. 3 chemical or mechanical stimuli -
Pleasure and pain are related to each other -
a high degree of distention produces pain - a small degree produces pleasure - as for instance opium in large quantities produces pain, in a small quantity it excites pleasure - relaxation or debility in a great degree invites pain - certain impressions in some people occasion pain, which in others excite pleasure - rough bodies give pain - smooth

"The self same nerves, are fashion'd to sustain
The highest pleasure, and the greatest pain.

mes give pleasure to the body — an excess of stimuli that are pleasurable in small quantities, are painful Excess of light offends the eye; in a moderate degree it is pleasurable — when impressions become painful they are irregular — women are said to have more fortitude in bearing pains - perhaps they have - but I believe it is owing to their nerves sooner attaining a paralytic state, than those of men — pleasure like pain is lessened by duration — Dr Haller says pleasure is the result of the afflux of Blood to the parts, as in generation - some say the proximate cause of pleasure is relaxation - moderate, partial morbid excitement is necessary in order to constitute pleasure and vice versa -

## Final Causes of the Senses

The senses are calculated to preserve the state of our existence - they prompt us to the propagation of our species, they drive us to our beds drive us out in the morning. to the business of the day — it appears that the ultimate design of the Creation of man, was universal pleasure —

Our senses invite us to explore the works of Nature and art – they should be the only avenues through which we should arrive at the fountain of happiness – the pleasures of the senses are not durable – thus I have finished my remarks on the pleasures and advantages of the Senses – but they cannot be enjoyed without health – they are untuned by disease – they are so nearly related to pain – that they often change into pain –

I shall now consider the pleasures of the Faculties 1st – when exercised in ourselves, 2d when exercised upon others and lastly – the proximate causes of these pleasures –

1st Pleasures of the Memory

By means of this faculty we command the sums that have gone down to rise again – we review by the assistance of this sense, the scenes of antiquity – we recall the battles of the ocean and the combats of the field – we review the Beauties of Nature and of art – I refer you to Rogers little Poem on this subject –

while we are able to reiterate the pleasures of the memory, we are unable to recall the pains that are past – true bliss and true happiness being the primary object of the life of man – this faculty gives to absent objects the vivid light of real presence ones –

the pleasures of the understanding are the most elegant and sublime – truth is so natural to the human mind, that it cannot be discovered without pleasure – Archimedes, when he had discovered the solution of an important problem cried out – I have found, I have found it – though the acquisition of knowledge gives pleasure – ignorance does not produce pain – "The wise mans happy Nature to explore – The fool is happy that he knows no more"

the pleasures of the wise consist of the mysterious connexion between free agency and necessity we are delighted with what we understand, but we admire somethings from necessity –

admiration is necessary to the Human mind — the Stimulus of admiration is essential to the moral and intellectual happiness of man — there is no admiration without mystery — something unintelligible must exist in the Sciences to render them pleasing — the pleasure of free agency are increased after being long deprived of them — the pleasure we derive from a belief that the wife acts from necessity, is of a mixed Nature — Ambition and Avarice have their pleasures — though these are of a mixed nature — the Pleasures of pure love are a little Heaven on earth the domestic relations of a family are fruitful sources of Pleasure — children excite pleasure in persons not related to them — this is almost general — Dr Priestly was impressed with the pleasures derived from children; he heard a man say that our Saviour never smiled he declared it was no such thing — he must, says he have smiled when little children were presented to him for his blessing —

married women live longer than old maids and Batchelors, because they derive more stimulus on account of their connexion hereafter I shall speak of this stimulus in the cure of some diseases — What shall I say of the Moral Faculty It would require the quill plucked from an angels wing to give this subject the coloring it deserves — the pleasures of this faculty do not result wholly from acts of justice — there are pleasures which arise from malice, avarice, anger &c in partaking of unlawful pleasures, man enjoys the moral faculty in common with his brethren the tenants of the lower regions — I have heard of men who derived great pleasure from beholding an execution — these pleasures do not belong to the mind in its natural state — they are the result of diseased Faculties many hours might be taken in discussing this subject — I come next to speak of the pleasures of Appetite —

## Pleasure of Apetite

all the faculties are gratified — this is born with us - it differs in different men the Rich Citizen, the war worn Soldier and the Stormed Mariner, all differ in their app-petites - but all are content with cultivating a little farm - the pleasures of the senses and of the mind often become subservient to each other - the pleasures of the table often unite with the pleasures of friendship - dancing with Love a relish for the pleasure of agriculture is born with us - a horse, a farm and a classic book revive in our minds a country school - a drum, a fife and a musket, remind the old Soldier of the difficult exploits of his younger days —

## Pleasures of Consciousness

these are derived chiefly from a sense of our existence and our personal Identity - no man wishes to change his mind for another - most men like to be just what they are ——

Pleasures of Exercising the Faculties of the mind in Other People -

Eloquent Speakers excite pleasure in their Hearers - an acute, strong, and penetrating judgement is a source of pleasure to others - we are pleased with the operations of the wise in others, whether in free agency or necessity the former we call Independance of mind - we are displeased with a man who is said not to have a mind of his own - A Physician acquires fame and excites pleasure in others by attention and judgement - our highest enjoyment arises from the action of the moral faculties in justice and religious duties -

Proximate causes of pleasures of the Mind

The fatigue of the mind acts powerfully on the body - it raises the pulse, a spitting of Blood has been brought on by violent mental exertions - the mental faculties act powerfully on the nervous system. the mental faculties act on the alimentary canal. they act on the

glandular parts of the Body - I go on to ob-
serve that the Proximate cause of these pleasures
is owing to a moderate degree of contraction
and distention - undue contraction and disten-
tion occasions pain - The final causes of the
pleasures of the mind - these were intended to
excite us to do good and be good - to the acqui-
sition of knowledge - by a happy constitution
of our minds, impressions originally painful
become agreeable by habit -
an ugly woman when well beloved is more
endearing than a handsome one

December: 6th 1809

The impressions which increase
sensation or thought wear down
the Excitability of the System &
renders sleep necessary: It is as ~~ne~~ess-
-arily alternated with the waking state - as light is
with darkness, in considering sleep, I shall
consider first the proximate cause 2nd the sleep
remote causes. 3rd the Phenomena which recur during

the proximate cause depend on a certain de-
-gree of depression on the brain, by the accu-
-mulation of Blood in its sinuses - a gentle pres-
-sure on the brain sometimes produces sleep -
the nerves cease to communicate sensation and
the mind refuses to act - the sleeping point I
consider at 20 - wakefulness at 10 above -.
the causes which induce sleep are such as act
1st By the certain abstraction of certain Stimuli
2 By such Stimuli as expend the excitability of the
System - 3 By such as elevate the system to
the sleeping point - to the first belong the abstrac-
-tion of light - 2 purging, Bleeding, and other
evacuations - 3 Substances applied to the Body
as oil &c 4 Cold - Death from cold is always
preceded by sleep - 5th Gratification in Ven-
-real appetite 6 cessation of pain - women after
delivery often fall asleep - 7 - sedative passions
as grief - excess of sympathy -

1er
2ne
Arro
subje
Hep
Jamai
Jurs
it pro
the
Hep
Hep.
Fa
home,
Jystem
ex
cest
Fente
ne
Ligh
in the

The remote causes of Sleep are
1st Stimulating and Narcotic substances.
2nd Certain Sounds 3 a certain degree of heat —
4 Prudent exercise of the understanding in particular
subject — 1 Labour — rocking in a cradle induce
Sleep — 2 Moderate Stimulus of aliments and drinks
small doses of opium — tea and coffee induce Sleep
I wish here to notice the relative effects of tea —
it prevents and likewise produces sleep — when
the system is at the sleeping point, tea prevents
sleep — ~~and~~ vice versa — 3rd certain sounds induce
Sleep, by direct Stimulus, Inhabitants of the
Falls near the Nile, cannot Sleep when from
home, 4th Moderate warmth by raising the
System to the Sleeping point, induces Sleep —
5th certain acts or exercises of the Mind, such as
thinking on one interesting subject — as counting
one hundred backwards &c — 6 Stimulus of
light often induces Sleep — sick people often sleep
in the day time who cannot sleep at night —

In order that the 3 classes of stimuli should induce sound sleep - they should act on the brain, nerves, muscles and blood vessels in an equable manner - thus if there be too much excitement in the blood vessels, perfect sleep is not induced, unless certain medicines be employed to destroy the equilibrium - Opium is most proper, when the nerves, brain & muscles are all below par or equable excitement, Blood letting sometimes produces sleep - this is by bringing the vessels into an equality with the brain in action - when the ~~brain~~ muscles are below equable excitement, walking is necessary to restore the equilibrium - we will not be likely to produce sleep from medicine adapted to an the systems if the brain be much excited - here conversation will do harm - the knowledge of these facts are necessary to make a man a Scientific Physician - the operation of all the remote causes of sleep is assisted by a recumbent posture - I shall now speak of Morbid Sleep. Opium, wine, tobacco &c taken in undue quantities, accumulate

Blood
nour
Sleep
broad
this
Sleep
here
It is
misc

Sleep
weak
nour
body
then
close
to ac
the T
Imp

Blood in the sinuses of the Brain and occasion morbid sleep – Azotic gas produces sleep. the sleepiness induced in crowded assemblies is partly produced by the azotic gas acting on the brain – this sleep is Morbid – it differs from natural sleep. in not being accompanied with an expenditure of the excitability of the system – it is by forcing sleep with opium, that so much mischief is often done with that medicine

## Phenomena of Sleep

Sleep comes on with a tickling of the eyelids – weakness and pain in children – it is the effect of morbid excitement – the intellect becomes torpid the body totters.

There is a certain order in which the senses are closed against all impressions – the eye refuses to act first; next the taste smell, hearing and last the touch – that the sense of touch refuses last I infer from our changing our situation so often

in b
there
bus
in do
repo
regu
those
in do
sleep
we a
dem
Bath
Schu
by th
dom
abs
of T
Dom
com
In c
bure
tim

in bed - This sense seldom repose completely - there is a difference in the order in which the senses repose, occasioned by idiosyncrasy - in some the sense of smelling, and taste do not repose - the muscles like the senses retire in regular order - those of the legs and arms first those of the head next those of the back last - in some persons this order is reversed - thus some sleep while sitting, some when standing - we see some ride, or walk sleeping - as Somnambulists - the night before the Battle of Princetown, a number of the officers and soldiers slept on their march, and were roused by the firing of the cannon - Sleep occurs sometimes suddenly, on account of the sudden abstraction of stimulus, the different systems of the body - like the matter of heat, have a constant tendency to an Equilibrium -

In sleep. there is first a loss of motion in the muscles and limbs - 2d Suspension of the sensations 3 diminution of irritability -

4 the
as re
Psalm
Sum
reve
to th
-ely
-crea
there
in th
in th
entre
Sura
Sura
Je
in th
arise
pr th
Lence
the
reve

& the involuntary motions become slower —
as respiration. the action of the heart and arteries
pulse becomes slower and fuller — the arteries
seem to derive a portion of excitability from the
nerves — the arteries seem to act as centrals
to the Body — the peristaltic motion of the bow-
-els is lessened in Sleep — 5 secretions are in-
-creased during Sleep — as the urine and bre-
there are two powers, says
in the animal oeconomy which govern it, as
in the planetary system viz centrifugal &
centripetal 6 The excretions are diminished
during Sleep — the suspension of the excretion
during sleep is to reason why some people
get fat — — 7 there is a diminution of heat
in the body during sleep. this decrease may
arise from confinement under the bedclothes
8th the system is reduced in strength in Sleep —
hence gout & epilepsy come for the first time in
the night — I wish you. Gentlemen to
remember this

9 the duration of sleep is different in different persons - studious men sleep more than laborers - carnivorous animals sleep more than herbivorous - because the food of the former is more nourishing - 8 hours sleep is mostly sufficient - some people sleep no more than 4 hours - Mr Wesley slept 4 hours only - the periods of sleeping and waking become regular by habit or association of motions -

when sleep is perfect, there is no consciousness of the lapse of time - I have heard of a man who slept 14 days, and when he awoke - imagined he had been taking a nap - we are told of a man who slept for 10 years but I do not believe it - person who sleeps little at night, are torpid - it is easier for us to awake than to fall asleep - the causes which induce waking are light sound and habit - the mind first opens from its repose vision is restored - at length all our senses

rouse
ment
a m
Nestor
As we
look
than
them
not
ted
are
been
were
-cuel
hence
in
per
bar

poised into action – then the equalibrium is restored – we awake more suddenly from a nap in a chair than in a bed – from an abstraction of stimuli at night, the system is weaker during sleep – handsome people look less beautiful immediately after rising than they appear at mid-day or in the afternoon – These things gentlemen should not be forgotten – the faculties are operated upon in the morning from what they are at other periods of the day – the faculties seem to arrange themselves in order, as it were by specific gravity – the moral faculty is most perfect and awake in the morn hence rogues seldom commit somany frauds in the early part of the day, as at a later period. – hence the best time to make a bargain is in the morning —

# The Causes of Dreams and their Phenomena

From a careful examination, I am induced to believe that dreams are not necessarily connected with Sleep – some people never dream I knew a man, who declared most solemnly that he never knew what it was to dream Mr Stewart, the great Pedestrian say he never dreamt when he lived on a vegatable diet – Mr Locke says the mind and the body sleep together – if dreams were necessarily connected with Sleep – I would say with the poet –

"Blest are they who sleep to wake no more

Dreams are morbid Phenomena in the mind and depend on irregular excitement. when the mind is in equaelibrium, then is perfect sleep – and no Dreames – you never or seldom hear of a dream in a farm house – this is owing to the fatigue of the day occasioning that state of the system which induces sound sleep –

if a dream chance to be produced
it serves as amusements to the family
for several days – common motion
of the brain in sleep are mechanical
thought, in sleep are intellectual –
the first are performed by brutes
as well as men, the latter
are peculiar to
man

December 7th

Our senses are often perverted in dreams
Delirium is an action of incoherent thoughts or
delirium is a higher grade of Dreams and
Dreams are a lower grade of delirium —
The dreams of debilitated persons are always
very distressing — dreams generally consist
of visible Ideas — for we receive more Ideas
by our eyes than by any of the other senses —
with our eyes open we see objects whether
we will or not — but there are certain sounds
by which our ears are not at all affected —
We never dream of any thing which did not
enter the mind by the senses, and hence the
truth of the saying "Nihil est in intellectu,
quod non prius fuerit in sensu" — in study
we endeavor to shut our senses against all
impressions which would not favor our study —
Hence some men prefer solitude for study —
Some like darkness — the faculties sometimes
act with increased vigor in sleep —

The memory is often greatly excited in dreams thus many things are revived during sleep which appeared to have been entirely forgotten. Ideas are sometimes recollected in dreams which are not afterwards recognised - a widow who was sued for a sum of money, though she had paid it - she dreamt shortly afterward that her husband came and told her of a drawer in which she would find the receipt - she went to the drawer and there found what she had desired - Now it is highly probable that during life her husband had actually informed her of the matter - tho' she had forgotten it -

A man when a sleep was stuck with a pin suddenly - he gave a jump and cried out - oh I know now what St Paul meant by a thorn in the flesh -

The Understanding is often excited in dream hence eloquent speeches are uttered in a sleep the unfortunate Mr Robinson one day, saw

a maniac, out of her window - called mad
jenny - at night she had occasion to take
a dose of Laudanum, that acted powerfully
on her brain and during its operation, she
got up in her sleep, and in this state dic-
-tated to her daughter, who slept in the same
bed - that Elegant Poem - now called the
Maniac - when she awoke she was ignorant
altogether of the proceedings of the preceding
Evening - the Will acts preternaturally
in Dreams - we often aim a blow at our
supposed Enemy - in sleep - Fear and the
different passions are excited by dreams -
children wet their beds under the influence
of dreams - this is owing to the great irri-
-tability of the Bladder - which being less
in old age - people advanced in life seldom
wet the Bed - The sexual appetite is excited
in dreams -
appetite for food is excited by dreams -
the loss or diminution of one sense is follow-

by the
fraud
veracc
only
never
ever
in the
they o
fee
case
Accu
ging
Throu
and
d 22
Rela
Here
to a
to a
Trans
Cer

by the increase of another - so it is with the faculties of the mind - some people have lost their veracity by relating strange tales, which had only passed in their mind during sleep. lovers never dream of each other but at the beginning and end of their love. dreams are most common in the decline of life, on account of imperfect sleep they occur often in children, & and in all people during sickness - Mr Stewart relates a case where a man had a blister on his head - during its operation, he dreamt of nothing but losing his scalp by the indians - a young man went through all the ceremonies of duel in his sleep and when he awoke, had no recolection of it - I advise you to read an excellent work called Religio Medici - very important secrets have been revealed in sleep. a young lady of this city, related to a female, when asleep, her love and attachment to a young gentleman; doubtless she would not have told the same, when awake to any person living - Somnambulists are those who walk in their sleep -

it is well attested that a young man composed a whole oration during sleep - Dr Blackmore came down from his chamber in the forenoon in his sleep - sat down, ate, sang, and discoursed and when he awoke, knew not what had passed the motions of somnambulists would make it appear, that they have two minds - -

A Fellow student of mine together with myself - were one afternoon at Edinburgh in company with Jno Brown, since Dr Brown author of a System of Medicine. by smart drinking my fellow student become intoxicated so that I had to lead him home he spoke French in a manner altogether familiar - the next morning when in Dr Cullens Lecture room, I told him I never before heard or knew that he spoke French, he was surprised that I had heard him, and declared that he had not spoken the language to his knowledge for several years; for he had entirely forgotten it - I have now attempted to consider the

Phenomena
gentle
all the
and in
1st lec
Equile
execu
Curren
2 Sl
bilit
tion
4 to
refer
the
Water
of
from
Mach
bal
Hyd
the

Phenomena of Sleep and Dreams - the subject gentlemen is worthy your attention

all the senses are completely withdrawn in Sleep - and it may be asked, why this partial Death? 1st Sleep serves to restore in a certain degree the Equilibrium of the Body - a greater quantity of excitement is collected in the Blood vessels during sleep - Sleep acts by equalizing excitement 2 Sleep affords the power of producing excitability of the system 3 Sleep favors the assimilation of food and Nourishment of the body - 4 to the mind it afford oblivion of cares - gives refreshment and fits it better for the business of the day - 5 Sleep restores the Faculties to their Natural order 6 Sleep dissolves false associations of Ideas and produce coherence - abstract Sleep from those who exert their faculties, and Madness would follow - the mind is in a balloon as it were, blown about by surrounding objects - 7 Sleep arranges the Moral Faculties the night is the time when bands are most

com 111

Jake

you

The

les.

Matthew

could

of

to wo

of a

ever

gua

1st A

also Er

wake

acce

mdu

Pate

Bible

Other

committed — few rise in the morning, to evil — Take away hope and sleep from man, and you make him the most miserable being on the face of the Earth — Say not with Epicurus — "Bless the man who invented sleep." Say rather, Bless the creator of the world, for this cordial Balm —

First Nature's sweet restorer —

It would seem as tho' we partake of the nature of a Clock, we require winding up, once in every 24 hours — Study without rest is the greatest inlet of disease —

## Uses of Sleep —

1st It serves to support animal life, during the abstraction of those stimuli which attend the waking state 2 It serves to dissipate an undue accumulation of excitability — 3 It serves to indicate the existence of certain diseases —

Galen relates the case of a man who fell asleep and dreamt that his leg was turned into a stone when he awoke his leg was paralytic —

I have no doubt that the man actually felt a pain in his leg before he fell a sleep - else he could not have dreamt as he did -

Here then Gentlemen, we take leave for a while of the consideration of the faculties of the mind, in a sleeping and waking state

Dec - 5th —

I proceed to consider in what manner the sensations are recruited - it is in two ways - by the use of aliments and Drinks, and these are necessary for our daily subsistence - by these social intercourse between different people, is preserved, and these serve to keep in our minds a knowledge of our necessary dependance on the supreme being - we have so much toil, that something is necessary to preserve the machinery of our bodies in motion - without these our bodies would become torpid and die - let us suppose that the people of this city were deprived of their appetite, for 6 months - what would become of our agricultural interest, idleness would be universal, and the time which

~~was~~ ~~which~~ was once honestly employed by the farmer - would be spent in vice - the air we breathe cannot be seen nor felt by our lungs, after a while. but this is not the case with our aliments. Our Creator seems to inscribe on every meal we eat - When this you See

Remember - me -

## Causes of Hunger

Dr Boerhave says the causes of hunger are
1st the internal action of the coat of the Stomach
2nd the remains of the last meal
3rd the gastric juice and the Bile effused in the Stomach - Bile may produce Morbid Appetite - the tape worm will produce Morbid appetite - Natural appetite depends on a certain relaxation of the Stomach, which I call the Hungry point - sudden fear, grief, shame depress the sense of Hunger by reducing it below the Hungry point - Opium, Moderate emotions of understanding by exciting the System above the Hungry point remove sense of Hunger.

Emotions of the understanding sometimes excite appetite, by elevating the system to the hungry point – There is great sympathy between the eye and the stomach – the state of the appetite is influenced 1st By the presence of the gastric juice 2nd By its absence 3rd By being in too great quantity

Causes of Thirst – are seated in the Fauces and Throat, they are 1st a certain relaxation of the throat, which I call the thirsty point – Fear, pain, Opium & elevate, or reduce thirst, according to their quantity and severity of action, exciting, exciting the system either above or below the thirsty point – 2 By acrimony stimulating the throat and fauces – This acrimony acts sometimes partially and sometimes generally partially as in eating salt meats – generally from a change of the fluids in fevers –

## Teeth —

We should here remark, that we shed our teeth in childhood, because they have not grown in the jaw — there is no antegration of any part of the teeth — they are situated in a spongy part of the jaw, are of a conical form by which they are able to sustain pressure — the molar teeth have three fangs, by which they are prevented from puncturing the maxillary sinus: —

## Stomach

This is the most important viscus — it is possd by all animals, the tænia excepted — there are more animals that have brain than stomach — the stomach is furnished with nerves for secretion, and the par vagum and eighth pair for specific sensations — the stomach is so full of nerves that it may be compared to a tenderness expansion by the par vagum & eight pair, the stomach is chiefly connected with the brain — next to the Brain, the stomach has the greatest sympathy

with
plano
was
the w
under
it ea
shou
the
the f
min
of w
ch.
the
Th
and
trit
face
Sa. D
Dr. J

with all parts of the body – from this circumstance Van Helmont thought – the stomach was the seat of the soul – the stomach is the index of the nervous system, and also the index of the mind – like the face of a clock it determines the state of the system – we should always make enquiries respecting the state of the stomach – by it we learn the grades of disease and also the state of the mind, if a maniac determine to do a piece of work, and chance to belch before he attempts it, he will desist from his undertaking — the stomach possesses a power of transmutation

## Digestion

This process is carried on mechanically and chemically – mechanically includes trituration only – Chemically includes putrefaction, heat, solution – much has been said of the triturating power of the stomach Dr Pitcairn supposes it to be equal to 12957 lbs

Dr. M
y ale
Butr
of dig
when
to be
received
are
days
food,
2 r
Myl
of 6
grea
wher
Jer
Jale
Chow
Doon
Supp
the

Dr Boerhave says it is equal to the strength of all the muscles in the body — I reject Putrefaction as an assistant in the process of digestion altogether — putrefactive aliments when received into the stomach are found to be changed by the gastric juice and rendered sweet — Heat and solution alone are necessary — The Polypus employs 3 or 4 days in winter to digest the same quantity of food, which in Summer he would digest in 2 or 3 hours — Mr Hunter found that digestion went on in a frog at the temperature of 60° and was checked at 38° Fahr. — the greatest dissolving power of the stomach is when the heat is at 112° — the Saliva, and gastric juice are necessary to digestion — 12 ℥ of Saliva are secreted in 24 hours — the dissolving power of saliva is established — Aliments are sooner dissolved in Saliva than in water — it is supposed to absorb oxygen — the gastric juice is the most active agent — Its power was not —

discovered by Spallanzani - Dr Haller knew it before Spallanzani made made a single experiment on the subject - animals supplied with gizzards have no need of the gastric juice, its place is supplied - the dissolving power of this juice is very great in man - It is greater in old men and children than in middle life - This is necessary to supply the place of teeth - it acts more powerfully on masticated the unmasticated food -

Nervous influence is necessary to digestion - By cutting the 8th pair of Nerves digestion is destroyed - the Gastric juice is said to contain Phosphoric acid - the Stomach possesses the power of curdling milk - this resides in other parts as in the lungs, liver and heart - further the influence of the whole system is necessary to good digestion - abstinence and diet in diseases is founded on the power of the gastric juice of the Stomach, from this view of digestion it appears to be exclusively an animal process.

And perhaps it never can be imitated by art—

# Phenomena of Digestion

1st after every full meal there is a slight degree of fever which comes on with a chill—the knowledge of this fact, should lead us to advise a moderate meal to those who are exposed to cold, as the sentinels of an army 2 there is often a disposition to sleep after meals—this is the effect of stimulus on the Brain. it is removed in some by smoking a cegar or drinking a glass of wine 3 the mental Faculties are often affected after a full meal—Dr Harwood had two hounds—he fed them and set one of them running for two hours—the other remained still at home, in the former verry little of his meal was digested—in the latter nearly the whole—5 a certain state of the Atmosphere influences digestion 5 food generally lies 7 hours in the stomach before it is digested—the medium period is 4 hours 7 the passions influence digestion it is increased by joy and cheerful conversation

digestion is retarded by grief and shame, after the aliment is digested in the stomach, we call it chyme after it gets into the duodenum and precipitates the indigestible part ~~it is~~ called Chyle the matter precipitated forms the basis of the faeces complete and perfect digestion requires the aid of another viscus - this is the Liver - this furnishes a fluid which mixes with the chyme and forms chyle - Chyme was formerly supposed to be acid, and that it lost its acidity by being mixed with the bile and become sweet - bile is supposed by some to be an excrementitious fluid I do not believe it - I hope to show you that Chyme is not acid - the design of the liver is to receive the Blood from every part - and by a secretory process, form its peculiar fluid, to be conveyed to the Chyme and to be mixed with it, I think it absorbs fat, in and furnishes Blood - the liver is present in all animals & in this point stands on a footing with the stomach

The d
differ
this
Halle
is ex
River
that
ment
which
-ou-
the
Aug
Aug
this
guec
Musc
Aug
Boze
Cog
the
with

The Cystic and Hepatic bile is very different 24 bile secreted in 24 hours $\frac{5}{6}$ of this passes into the Duodenum says Dr Haller – It is ~~not~~ probable that this fluid is excrementitious – venous blood of the liver is less disposed to putrefaction than that of any other part – this is owing to its containing a quantity of Chyle – in animals who have no gall Bladder the Hepatic liquor is found to be sweet, the livers of poultry are sweet – Columbo, root is sweet when dug up. it grows bitter by keeping – may not this be the case with the bile – the Pancreatic juice is a solvent like the Saliva – it is mixed with the Chyme, ~~the~~ form perfect Chyle, Intemperance increases the labour & size of the liver – Buff is formed from coagulable Lymph, and this from Chyle –

## Uses of the Gall Bladder

the Gall bladder seems to act the same office with the liver, that the Spleen does with the –

vascular System - it appears to be designed to contain, redundant bile. It is hopeless the less nutritious parts of the bile are thrown into the gall Bladder - Perhaps the Bitterness of ear wax is occasioned by stagnation, and it is likely the bitterness of the bile is produced by a similar cause - bile serves to precipitate those parts of the Chyme, not fitted to form good Chyle — the liver is called by some an excretory & secretory organ — I adopt that opinion - the duodenum is the receptacle of the lymphatic faeces - while the stomach is most active the liver from the pressure of the former is most idle - I differ from all Modern Physiologists in supposing that pressure of the stomach arrests the secretion of bile, I am supported in this opinion by the fact, that pressure on any gland arrests its secretions — — — — —

Dr Haller says that in animals with no gall Bladder, the bile is sweet - the Hepatic bile is

always sweet in infants. Dr Fordyce found that chyle was made without the aid of bile in inflamation of the liver, the blood is not always sizzy - in these cases chyle is not perfectly made and this from the chyle that is ~~not perfectly~~ coagulable lymph (which forms the buffy coat) is procured - the fector of stools is derived from bile, In bilious fever that is a high grade of it, the stools are not fœtid until the disease begins to be arrested by purges. after this the stools are fœtid - this was one way by which I was enabled to know the state of my patient, and that even before entering his room - there are often found among children some who have hard belly - this is owing to an enlarged liver, some have supposed this enlarged liver to depend on wind, but I think it is owing to an engorgement of bile -

We often see persons with full blood vessels, who have not eaten anything for a long time

This
far
live
Hall
ben
able
mit
fur
liv
in
pre
Ire
gam
Bne
fro
fro
fro
the
the
the
the

this must be produced by an absorption of fat from the omentum &c carried to the liver and there changed into chyle — Dr Haller once found a lump of fat in the vena portarum in this case, it is probable the lymphatics were relaxed, and admitted the fat in its uncommunicated state — There is an extensive sympathy between the liver and stomach — Dr Thompson says that in the East Indies, a diseased stomach is frequently a symptom of Diseased liver — I refer you to the dissertation of my son James Rush M.D. on the function of the Omentum — the liver is the second chylopoetic organ, in which is prepared chyle, from the fat which the lymphatics absorb from the omentum and convey to the liver the chyle is conveyed from the intestines by the lacteals into the thoracic Duct — there into the left subclavian vein, to be carried to the heart — where it is converted into Blood

# Of the Nature of Blood

the Blood consist of several different part. when taken from the arm a watery halitus arises - after this it seperates into crassamentum or cruor and serum - the crassamentum consist of coagulating lymph and red globules - the fluid part is serum - the Blood is the same in all animals of the same age. where it is of a red color -

coagulating lymp is common to the blood of all animals, whether the globules be red or white - it is absent in the foetus - sweetish and pale in infants and red in youth — it stagnates in different parts and coagulates forming Ecchymosis, it coagulates when exposed to air - various circumstances retard or accelerate its coagulation - in Bleeding the quantity of coagulating lymph differs according to the velocity with which it is drawn — the figure of the vessel into which the blood flows - influences its coagulation - there is more

Buff when the blood is drawn from the arm into a shallow dish, than when into a deep one – it coagulates slower in earthen and wooden vessels than in metallic ones. It coagulates slower in a warm room than in a cold one, because the former are slower conductors of heat – To produce the buff or sizy the action of the vessels must be open and full it occurs in pregnancy – and in all old people in the spring of the year – when the action of the vessels is very violent the buff appears more feebly – in bilious pleurisy buff is not evident – when the bilious symptoms are reduced there is nothing more left than common inflamation and there is now the buffy coat in the highest grade of inflamation, the blood refuses to coagulate – it dissolves – this dissolution of the blood was formerly escribed to putrefaction – it is owing to violent action in the blood vessels. I offer this from its taking place in arteries before veins. because the action

of an
depo
depo
suffe
By
the
Nitr
The
repe
as the
Intru
exec
exec
Dis
mo
and
of
g
-tin
th
fib

of arteries is greater than in veins. Blood is dissolved by the venom of vipers, it is also dissolved by carbonic acid gas when taken in sufficient quantities to occasion death — By giving Nitre, Sal Soda — I we decrease the disposition of the Blood to coagulate — Nitre produces its effects wholly by reducing the action of the Blood vessels — the Blood vessels and the Blood stimulate each other — as the brain and the heart do. The cure of Tetanus consists in bringing back the plus excitement of the muscles, to the minus excitement of the Blood vessels —
Dissolution of the blood is owing to the violent mechanical action of the vessels, and not to putrefaction — a too feeble action of the blood vessels produces dissolution of the blood as in scurvey — The coagulating lymph is said to be possessed of vitality this is what I call the capacity of life, when fibrin or coagulating lymph is subjected to the

section
in X
the
into
tract
nit
the
plan
ania
are
mat
form
from
coag
form
ver
the
dis
for
the
her

action of Galvanism, motion is perceived in it — a violent action of the blood vessels the Blood is as it were whipt and converted into coagulable lymph — I shall prove that pregnancy is a disease — that parturition is a violent paroxysm of disease — the buff coat in pregnancy is owing to inflamatory action — the fibrin forms new animal matter, the fluids like the solids are animalized in health, but become animated by disease, may not the matter which forms the foetus and nourishes it be derived from the disease of the mother, by which the coagulating lymph becomes animated and forms new animal matter, I think it is very probable — How humiliating then is the condition of man, he is conceived in disease, made up of disease and brought forth in disease — life is excited in the fluids by the stimulus of disease — perhaps the fibrin of the Blood has no more

sensibility than other matter, untile affected by disease – coagulating lymph appears to be one great single muscle, the venom of the viper in one place destroys the whole texture of the blood – this is by sympathy of continuity, the fibrin of the blood is an unit – its dissolution by violent action may be called Apparent Death, when stimulated to a coagulating state. I call it Resuscitation – by this coagulation the pleura adheres to the lungs – here the coagulating lymph is animated and and becomes vascular.

Serum is water with a number of salts held in solution, it is seldom in a simple state in the vessels, it is mostly mixed with a little lymph, its use is to convey all the matter out of the body. it is by its excess and stagnation that partial and Universal dropsies are accasioned –

Red Globules, from late observation it

appears that the red part of the blood is not globular, I have viewed them with an excellent Microscope of D. Hewsons and they always appeared in the form of a holland cream cheese - their size has been computed by Hunter to be 3000th part of an inch; the oxygen of the air increases the red color of the Blood, even thro' a Bladder - the oxygen of nitre is the cause of the red color which ham and beef receive from it the blood of an adult is supposed to contain Iron to the quantity of ℥ij - the red color of the blood in some faces is owing to its imperfect oxydation in the lungs - the red globules are not the most essential part of the blood, good health depends in part on an equable mixture of red globules, they give tone to the blood vessels and strength to the whole Body - the red globules by forcing their way into serous vessels occasion inflamation

the quantity of blood in a man is supposed to be 25 lbs

Blood is the source of all the secretions — we will next consider the use of the Spleen

## Use of the Spleen

To this viscus four uses were formerly ascribed, 1st the preparation of the blood for the secretion of bile, 2nd it is said that the red globules are formed in it, 3 to afford a supply of blood for the stomach some viscera are our friends in health, but the Spleen is our friend in disease — Mr Holme says there is a direct communication between the stomach and the Spleen he tied up the pylorus and the liquor was carried from the stomach to the Spleen the Spleen performs the office of a basin held by the hand of nature, to contain redundant Blood — the Spleen has but one artery and that is larger than that of the liver — the Spleen has no excretory duct, the diameter of the Spleen is 80 times larger than that

of its artery – the latter is much stronger than the aorta – the Spleen will admit an increase its weight of 4 oz without any enlargement of size, it is placed in the epigastric of the body and is never lessened in size by fast – in laughing, the Spleen opens a Waste gate for the blood to pass through – when sudden death occurs from laughing it arises from a rupture of the Spleen – the pain which we feel in running, riding &c is seated in the Spleen – the Blood in the Spleen is less coagulable than that taken from the arm – that is owing to the force with which it is sent to the Spleen – the Spleen defends the System from injuries of various kinds, Hemorrhages often arise from a large and obstructed Spleen – in wounds and inflamation of the Spleen, there is but little pain – Hippocrates thought that bleeding at the nose was owing to a stoppage of the door of the Spleen –

in consumption the Spleen is said to be enlarged to 3 times its natural size, the Spleen is one of the most useful organs in the body – in violent actions of the Blood vessels, the Spleen opens its friendly door to receive the redundant blood, when this is refused, sudden death happens – the life of the Spleen is attended with disease the liver is thereby enlarged – the liver has an auxiliary viz the gall Bladder – various other organs are assisted in their functions and why may not the Spleen give its aid to the arterial system when necessary –

## of the Thyroid and Thymus Gland

The design of the Thyroid gland is to defend the brain from the morbid effects of those causes which determine too great a quantity of blood to it – this gland is situated in the larynx – it is larger in women than

in men – because their bodily diseases are more violent and this gland is larger to defend their brain from the inordinate action of the system – the Globus Hysterieus of women is connected with the Thyroid gland – it is probable that the great irritability of this gland in women is the cause why Bronchocele occurs in them so often – here the gland is much enlarged – imbecility of mind has been supposed to be the effect of a want of this gland – The Thymus appears to answer the same end to the Lungs that the Thyroid does to the Brain – It counteracts the inordinate action of the Blood sent to the lungs the lungs of children require this outer its absence in advanced age is owing to the action of the air by habit, becoming agreable – it continues longer in women than in men – and sometimes in the former it does not disappear
(because their lungs are oftener and more fully distended)

# Lymphatics

There is a system of small vessels arising from all the cavities of the body and conveying their fluids to the Thoracic Duct tho' some are said by Monro not to go immediately to the Thoracic Duct they possess coats like blood vessels as appears from their contractions. They are much stronger in proportion than the latter. - They are all endowed with valves to prevent the afflux of lymph. They are all endowed with nerves arteries and veins and have regular circulation. - they have been supposed to have mouths by which they absorb from the surface of the skin. This has been shown in some fish. - the lymphatic glands appear to be cellular. Mr Hewson says they are. - Mr Munro says they are not. the lymphatics are said to possess a retrograde power. Darwin advocated this -

The lymph of these vessels is coagulating & in dropsy the lymph is less coagulating than in health. Mr Hewson says this is owing to increased action in these vessels the lymph is supposed to be taken up by capillary attraction - I think it is effected by the action of the muscles - by the pulsation of adjacent arteries - Lymph acts on the lymphatics as blood does on the Blood vessels — in Strabismus in Hydrocephalus, Physicians mistakenly suppose an effusion to have taken place - I have seen cases of this where effusion had not taken place - the lymphatics absorb solids as well as fluids. - the Thymus gland is removed by the action of the lymphatics - the arteries and lymphatics appear to perform different offices - the former repair, the latter destroy different parts - on the strife maintained between these, health seems to depend —

and
tice
Le

Da
whe
hyp
-ere
y c
dis
it
the
the
fo
rea
ho
m
a

and no sooner do we see an armis-
tice take place, than Diabetes, Scrophula
&c appear—

Dec— 13th—

Dangerfield's experiments to determine
whether turpentine is absorbed by the
lymphatics — Dr Franklin first discov-
-ered that Turpentine changed the smell
of urine — 500 lymphatics have yet been
discovered to open on the surface of the Skin
it is true that lymphatics exist under
the Skin — the Stimulus of Opium relieves
thirst by Sympathy. Dr Currie has
proven that no increase of weight
resulted from putting the Body into a
solution of salt — variolus matter is
not taken-up from the skin unless an
opening be made — when mercury
affects the mouth it is not owing to
its absorption by the Skin — but by the

vapour of the Card being inhaled, it is more easily inhaled from the axilla — Dr Mussey of Massachusetts has attempted in his excellent Inaugural Dissertation to prove cutaneous absorption, after lying in an infusion of madder for some time, he found his urine to be coloured with it. the madder had passed through the Skin, the same effects take place in drinking madder — I remark that madder is one of the most penetrating substances in Nature — is it not possible it may pass through the pores by transudation — Dr Mussey supposed Zzz were absorbed in one of his experiments — I expect this was owing partly to a stoppage of perspiration it is said the lymphatics have an appetency for some ~~[illegible]~~ others, I consider the Lymphatics as omnivorous — I know no advantage derivable from the absorption of ~~disease~~ Death every lymphatic would afford a passage for

the lymphatics are excited into action by distention by pressure & Dr Chunnro relates a case where the Sternum was absorbed by the pressure of the aorta - the lymphatics are excited by friction - they are excited by vomiting - stimulating passion act on the lymphatics - refer you to my medical Enquiries - the lymphatics serve an important part in enlarging the Body - They act as scavengers in removing the filth from the streets of a city - Dr La Roche had a case of Hepatitis where the liver had suppurated the patient expectorated pus - on opening the body after Death no communication between the lungs and liver was evident

## Secretion

Various theories have been given for the change of Blood for the different Secretions - the fluids secreted are lymph bile, saliva, pancreatic juice, Gastric juice,

Dec - 14th

## Secretion

The secretions secreted are different in their Nature, and all from the same organ - the Blood - 1st Lymph, this is coagulable in anasarca - 2 Saliva, this yields by analysis - water, mucilage, albumen phosphates of lime Soda &c it affects Oil in forming an oxyd of mercury it is much changed by disease - when exposed to the air, it emits an offensive odour may not Mercury produce the same effect on Saliva as putrefaction - 12 ℥ are secreted in 24 hours - 3 Gastric juice contains animal Salts, yield phosphoric acid - the gastric juice is a solvent, it is strongest in young and old people, for wise purposes - it becomes more acrid in old age - increasing its solvent power - its power is increased by diet. 4 Mucus is diffused through various parts of

the body — in the oesophagus, stomach, bowels, urethra, vagina &c. 5 Synovial juice is secreted during the night, it is wasted during the day — as is found by measuring the body in the morning and at night — when it is found to have lost 1/2 an inch — I believe this was was first discovered by a soldier the Synovia contains various Salts —

6 Urine — this combined with oxygen is said to form calculus — no uniform solvent has been found for calculus exercise of the Passions influences the quantity of urine — the urine of children is more bland than that of Adults — the urine of old people acquire a fœtid smell — the kidneys and the bowels alternate in their action with the weather — 7 Semen has a disagreeable smell and pungent taste — perhaps we should ascribe the changes which take place at puberty — to the formation of semen it changes the Synopsis of violets — Semen is

fecundating & contains innumerable animal-
-culae - Spallanzani's Experiments - In intem-
-perate Venery it becomes thin and watery -
in Old People it partakes of the acrid prop-
-erties of the faeces. & Liquor of the Prostate
gland partakes of the nature of Mucus, may
it not be intended to sheathe the acrimony
of the seminal fluid - I know no other reason
9 - Tears are watery, transparent and of a
greenish color - they change the color of violets
yield different salts -
10. Milk is a secreted liquor, obtained fro-
the Blood by a peculiar process, the milk
seems to be formed from fresh chyle - it
appears to be like chyle - it is like chyle
as serum is like urine - That it is obtained
from chyle is infered from various cir-
-cumstances - milk is composed of oil - muci-
-lage and water and also sugar. the oil yields
butter - the mucilage cheese, the water yields
whey - from this it appears to be of the most

nutritious Nature – hence it should never be prescribed when we wish to deplete the System the secretion of milk is much affected by certain passions of the mind – the milk is never affected by diseased chyle –

11 – Fat is contained in small cavities it is the product of disease both general and local – it is most liquid in hollow parts of the body – it melts by exercise – it is mostly met with in the interstices of large muscles – even in the 40th. year of age – some persons acquire it and others lose it in a very short time – sailors and soldiers seldom have much fat – fat gives a regular contour to the body – in the face it gives Beauty – it is said to prevent the effects of cold – it supplies the Body with nourishment during disease – the Omentum I believe is the Medium of communication – it has been said that fat has not been found in the Blood – this is not the case – fat people discharge less Blood than lean people do – Fat by analysis

Gilbo

Alex

you

not

Lind

was

Majo

bele

Mea

an

Jom

cip

hep

The

Gen

on

eng

bee

As

Yields fixed oil, acid, charcoal &c —

## Excretions

Alexander the great whose ambition was beyond all reason, was heard to say that if were not for his passion for women, he would fancy himself a God; had he only reflected that he was necessarily subjected to discharge an offensive mass of Loathsome matter daily, he would have believed himself to be on a footing with the meanest subject in his empire - The Excretions are 1st Faces - 2nd Bile - 3 Perspiration and some say sweat - 1 Faces - These are precipitated ~~from the~~ bile from the chyme and passes into the lower bowels and putrefy as they descend - It contains Sulphuretted Hydrogen Gas - few experements have been made on the pure Gas - Dr Priestly who was always engaged with these subjects - had like to have been injured by an experement on this gas - As some of it was discharging from his bowels

or Back Door, he placed a candle to it and it suddenly exploded — it changes the Syrups of Violets —

2nd Bile, the color of the Bile is yellow, sometimes green and sometimes Black — the bile influences the peristaltic motion of the bowels the passions influence the excretion of bile — hence an angry man is called a choleric man — it is one of the water gates of excessive anger — the bile is composed of albumen, Bile Salts &c some say it contains an Oxyd of Iron a small quantity of Sacharine Matter — hence I infer the liver to be a Chylopoietic organ —

3 Perspiration — the question is asked, how do we know that any matter is discharged from the Skin, since it is not visible — we answer wash the arm and wipe it dry — introduce it into a cylindrical glass and it will soon be wet Winslow, says he saw the perspiration arising from the head of a man — Malpighi thought it was a secretion — Ruysch has proved the

contrary — what is the Nature of the matter of Perspiration — 1st it is watery 2 Limpid 3 Saline — Dr Klapp proved it non astringent It has a peculiar odor said to be derived from an acid — this odor is very perceptible — it is different in different people — in hard workers it is most foetid — Watch makers do not change the air of a room more than 2 carpenters — it differs in age — M. Bichat says he knew a man who could distinguish a virgin from a married woman merely by the odor of their perspiration — Child bearing alters the quality of the matter of Perspiration — the smell in a church in Greenland was insupportable to a gentleman who was there by accident — merely because the inhabitants lived on whale oil — perspiration contains gelatinous matter — The quantity discharged in 24 hours has not been ascertained — It is supposed to be from 20 to 50 ℥ — perspiration is greater after divided meals —

It is more increased by fluid than solid food — It is more profuse in men than women, and hence one cause of their monthly evacuations — sometimes we perspire more in sleep than when awake — motion and rest influences its quantity — passions of the mind and gratifications of the venereal appetite increase it — when the kidneys or bowels are obstructed their contents often pass by the perspirable vessels — in violent agony it is sometimes changed into Blood or Blood is forced into their vessels and discharged — thus the saying respecting our Saviour "sweating great drops of Blood" is true —

## Nutrition

This is completed by animalization — it is said that no motion is evident in the heart until the formation of red Blood — so that it seems that Red Blood is necessary to give the first impulse to the heart — The arteries

the
to a
thing
by
wh
The
gre
dea
but
fro
we

the arteries prepare and carry nourishment to different parts of the body - bones are tinged easily by madder this must be conveyed by the arteries — As a penance for crimes with some Indians the are forced to hold up their arms for months by which they are greatly emaciated — we should look for the seat of disease in every system of the body but chiefly in the Blood vessels — all parts of the body are said to be renovated every seven years — this is not the Case —

Dec. 15th —

On the peculiarities of the Sexes

The Female Sex — I shall consider first the peculiarities of their bodies, then of their minds — the peculiarities of their bodies are General and Local — 1st general women in all ages are less than men, and acquire their growth much sooner — the texture of their bones is less compact — their cuticle

is softer and smoother that that of men — the softness of their skin has been attribu-ted to the more exquisite action of their absorbent vessels which take up every thing which would change the Nature of the Skin — the true skin in Women is softer and the cellular membrane more open — the heart of a Female is less than that of a man — their hands less, liver much larger — their arteries have less stre-ngth but more irritability — the internal lamina of their arteries less compact than in those of men — their brain is more subject to motion — women perspire less than men — Local Peculiarities

the Pelvis of women is wider than in men — hence they contain their urine longer than men — their Trochanters are wider apart — in their pelvis is contained the Uterus and its appendages — the external organs of women are different from those

of men – They are subject to a monthly discharge – they have a large gland on the breast – Their thorax has more motion and abdomen less than in man – their voice is more soft – they are more long-lived – that is more women live to be old than men, but more men live to be very old than women – thus far have we traced the peculiarities of the Female body – we now come to consider the peculiarities of the Female Mind – Their minds are less vigorous – this has been attributed to their manner of Education – but I am not of this opinion – I think it is natural and original – the minds of women are different from those of men, 1st in the understanding – it is less powerful in women than in men – hence we have never heard of a female Newton, Bacon &c – Their Imagination is less powerful – A Homer or a Milton has never appeared in them

In
tion
of to
their
estu
to a
Ame
they
wom
bui
we
of
in
in
bec
Ga
fa
ex
pl
su
an

In Memory they excel men, in the retention of words, events &c - hence women have often received the appellation of Almanacks - their capacity to remember words and Events is highly estimated by Lawyers - they are superior to men in taste, the moral Faculty of women more acute and sensible than in Men; they have a more exquisite sense of Deity - women possess more kindness and charity but less Benevolence than men, hence we seldom meet with a "Female citizen of the World" - the Humanity of women is greater than that of Men, conscience is less sensible in women than in men, because seldom so much excited - by Education and custom they are restrained from gross vices and have therefore less exercise of conscience - Women afford most pleasure in middle life - they are the chief support of the two extremes of life - infancy and Old Age - women are more disposed

to a
fain
faith
their
their
sign
nage
act
-aug
to a
mic
the
true
my
the
are
dei
cy
g
a c
lu

to despair than men — mothers sooner despair of the recovery of a sick child than fathers — they have quicker perceptions their judgement and reason is less acute — their perception is greater in understanding signs — they have more fortitude but less courage — the former is a passive the latter an active quality of the mind — men have courage from necessity — women incline more to society than men — they are more communicative of secrets than men — but they are the secrets of others — this is certainly true — they are less disposed to forgive injuries than men — this is owing to the weakness of their minds — strong minds are above revenge — a revengeful man deserves petticoats — women have more delicacy and modesty than men — this is the effect of Nature, it is an instictive principle — a want of chastity is more detestable in women than in men ——

there is an original difference between the bodies and minds of women and men — There are some exceptions to these peculiarities — we find as many female minds among men as masculine minds among women — Dr Young says "a shameless woman is the worst of men — Women sometimes show more courage than men — this is an effect of morbid excitement — Let no one suppose that my disharagement (if it be out of the Female Mind) is the result of old age — I no men have more reason to love them than I have

in no place is equality among the human race so completely evident, as in a grave yard — Women are subject to a monthly discharge called

Catamenia

It is confined to females of the human Species except some of the monkey race —

it occurs at different ages in different climates, in warm climates it occurs at 12 years of age, in cold climates at 15 – this discharge generally occurs at 44 –, I have known 3 girls to menstruate at 7 years of age – the usual period of the disappearance of this discharge is at 45 – there was a woman in this city who had her menses at 80 – women who are hard drinkers often menstruate at 60 – in some it returns often having ceased many years – Dr Haller mention many such cases – Mrs Sinclair had hers at 70, when this discharge returns often having ceased for many years it is attributed to an effort of the System to renovate itself – the menses cease sooner in hard working people – the quantity discharged in our climate at the regular time – is about ℥iv – it continues 3 or 4 days, it recurs every lunar month – the Blood discharged

has no peculiar smell nor morbid qual-
-ity — the menses cease generally during
pregnancy & giving suck - some menstru
-ate during pregnancy and even while
suckling, this comes from the vagina and
not from the uterus - abortion never takes
place in consequence of the menstrual dis-
-charge - the menses generally return after
giving suck for 11 months - women are
more susceptable of impressions during
menstruation than at the intervals —
a disease during menstruation is more
violent than at any other period - they
have then two diseases, some women
can tell then the coming changes of the
weather - their pulse is raised —
I believe menstruation is a disease
the state of the Disease indicates that Mor-
-bid excitement takes place - the menses
continue during many diseases as in
Mania &c we often find them present in

violent fevers - Habit is of great influence in preserving their regularity -

What is the cause of this monthly discharge? What is the cause of its return at stated periods? What purpose is it intended to serve?

1st Dr Brown says it is owing to the venerial appetite, but they are regular in persons of the most exemplary chastity - how do we account for its regular appearance in Maniacs - 2 It is supposed to be owing to a fermentation in the uterus - 3 Some suppose it to be collected in a sinus in utero where the Blood is congested - this Anatomy proves to be false 4 it is said to be owing to plethora to this women are always disposed by their perspiring less than men - to this last opinion Modern Physiologists agree, is the plethora general or does it exist in utero - I agree to both - there is often a translation of the menses from the uterus to other parts -

then the menses have been discharged from the lungs, eyes &c all parts connected to the System - here we see various servi-
-ces performed by different parts, diseases which debilitate the System, often stop the menses - the apetite is often impaired in the menses. the Symptoms attending the menses are such as precede plethora --
the menses is a disease - first general to the system and then determined local to the Uterus. the menses is a hemoptysis from the Uterus. the veins of the Uterus have no valves - Mono Says -

the causes of its periodical return
It cannot be the moon, else all would menstruate at the same period - it must be owing to association and habit -
the purposes that it serves are said to be the 1st nourishment to the foetus in utero -
this is incorrect many women bear chil-
-dren before and after menstruation -

Hunter taught his pupils this - I invert Dr Brown's theory; instead of making the venerea appetite the cause of the menses I would make it the effect -

The only use of menses is to excite that falness &c in utero, necessary to gestation There has been much said of Hermaphrodite in the Human Species - there are no such things -

Dec 16th -

Peculiarities of the Male Sex -

1st Their organs of generation, for this I refer you to anatomy & Changes which take place at puberty - there is an enlargement of the bones of the forehead - hoarse voice - a beard - eruptions on the skin and throat and the venerial appetite - this mostly occurs at the 14th year - sometimes much earlier - Haller says a boy 3 years old had a beard, this was a monster a lusus Naturae, this has been ascribed

to an absorbtion of semen, the venerial appe-
-tite is produced by the Stimulus of the seed in
the seminal vesicle - this Stimulus has
produced mania and even death -
Morph is the red nose of women in pregnancy
the shrill voice, loss of debility in Eunuchs with the effect of Debility & no changes
are induced in the Female sex by the absorp-
-tion of Seed - Hunters Animal Oeconomy - at 21
in Males and 16 females. marriage may take place -

## Generation

The obligations of matrimony are as univers-
-al as the venerial appetite - in every class &
situation of life the venerial appetite exists -
Whether in Slaves or Kings - the Children of
Israel multiplied in their slavery, the same
takes place with the Blacks in the West Indies
A Slave will walk 12 miles, after working
hard all day, at night to comply with the
venerial assignation - Man inclines to pro-
-agate his species - a near approach to Death
does not extinguish the venerial appetite -

Mr Potter at 92 years of age had a child, by a wife who played about his knees – the venerial appetite is present in all seasons of the year – the immoderate gratification of it occasions debility – in Prussia if a man seduces a woman he is obliged to maintain her – and she is chief heir to his estate – By the aid of a microscope Animalculæ are evident in the semen – the Female Uterus is considered the Matrix into which this is received – the Animalculæ are admitted by all, the semen is their proper Element, out of it they perish – Spallanzani's Experiments – How is the male seed brought into contact with the Female ovum? it is said that the ovum is seized by the fimbriæ of the Fallopian tubes and carried into the Uterus and compressed by the male semen – Physiological Books to be consulted – Every part of the Body seems to club its portion of semen, hence the foetus partakes of the form of the parent – Hunter says that the passages in the body

have the same motion as the bowels, that is peristaltic – There have been cases of pregnancy where the Hymen was not ruptured – here it was probable effected by the absorption of semen from the mouth of the urethra – the penis not introduced far enough Clouds and darkness hang over and envelops the Secrets of Nature – Conception has been said by Dr Haydon, to be the effect of Specific Sympathy, Spallanzani proved that no impregnation took place except the Semen came in contact with the ovum – Sympathy has been taken too often for Animalculæ – Dr Harvey opinion is the most probable viz. the peristaltic motion of the ovaria – the whole process of conception is performed in the ovaria – the ovaria is a hot bed (as it were) to contain the seed. The Uterus is a green House to contain the plants – most of the Symptoms of conception cease in 3 months – I have considered

Dec 18th —

The presence of the Hymen in the Female has been supposed to be the only test of Female virtue — and its absence a sign of vice — This is not the case — it may be ruptured by pricking. Disease &c it is often removed — at the close of natural pregnancy, the foetus makes efforts to escape — perhaps the violent throws of the mother are produced by the motions of the child — I do not think there is a necessary connexion between pain and child bearing — woman in the west Indies have less pain in parturition than those in Northern climates — they take great quantities of sweet oil — the pains of parturition are much lessened by venae. sect. two or 3 days previous — these pains are as much a disease as pleurisy or cholic — they are to be treated with similar remedies — the chief is Blood letting — this has been established by Dr Dewees — the discovery of

it, says Dr Shippen, marks a conspicuous
Aera in the History of Midwifery - Bene
Sect acts by inducing debility from abstrac-
-tion — the pain of parturition is not fatal in
Epilepsy - I knew a woman who was de-
-livered in Epilepsy and when the fit was
over, she looked at the child and asked
whose it was, on being told it was hers,
she could scarcely believe it, until she was
convinced by feeling the laxcity of her belly
the different Stages of life considered

Here gentlemen we take leave of our Physi-
-ology - I cannot leave this subject without
recommending it to your serious attention.
Hygiene treats of the means of preserving
health - health is that State of the system in
which the excitement and exciteability are
in equilibrio or in exact ratio —
we now take our last pleasing view of the
body and mind of man - hitherto we have

beheld his form beautiful, his muscles filled with Blood, his bones with marrow, his whole frame in action and endued with vivacity. But we are soon to view him, rugged, emaciated, pale, sickly, and even in the jaws of Death. — "Not an anchor was ever cast into the current of time, which could arrest for a moment, the over flowing stream of life" —

## Of Aliments and Drinks

I shall speak of these as used in our own country — this part of our subject shall consist chiefly of facts — Aliments according to their qualities and quantities are the causes of many diseases — Many of our medicines are taken from aliments — the most successful Physician is he who attends to the diet of his patient — Man was created a civilized being — but by negligence he became Savage the aliments which man first ate, were pointed

out by revelation – it is not probable that the creator directed every article – but we know that man from the alphabet was able to make words, and so with respect to animals from a few a vast number might be easily made – Man is a creature of habit as much as it respects his food, as his climate – there is no vegatable but what is eaten by some creature – there hardly exists a quadruped or insect which has not furnished an article of food or luxury in all countries – it belongs solely to man to vary his diet in the nicest manner – There is no doubt that man was destined to live on a mixture of animal and vegatable matters, this is obvious 1st from his instinctive relish for both – 2nd from the structure of his teeth 3rd from a diet consisting of either animal or vegatable alone being injurious to health – probably one of the final causes why man should not live on vegatable diet alone, was

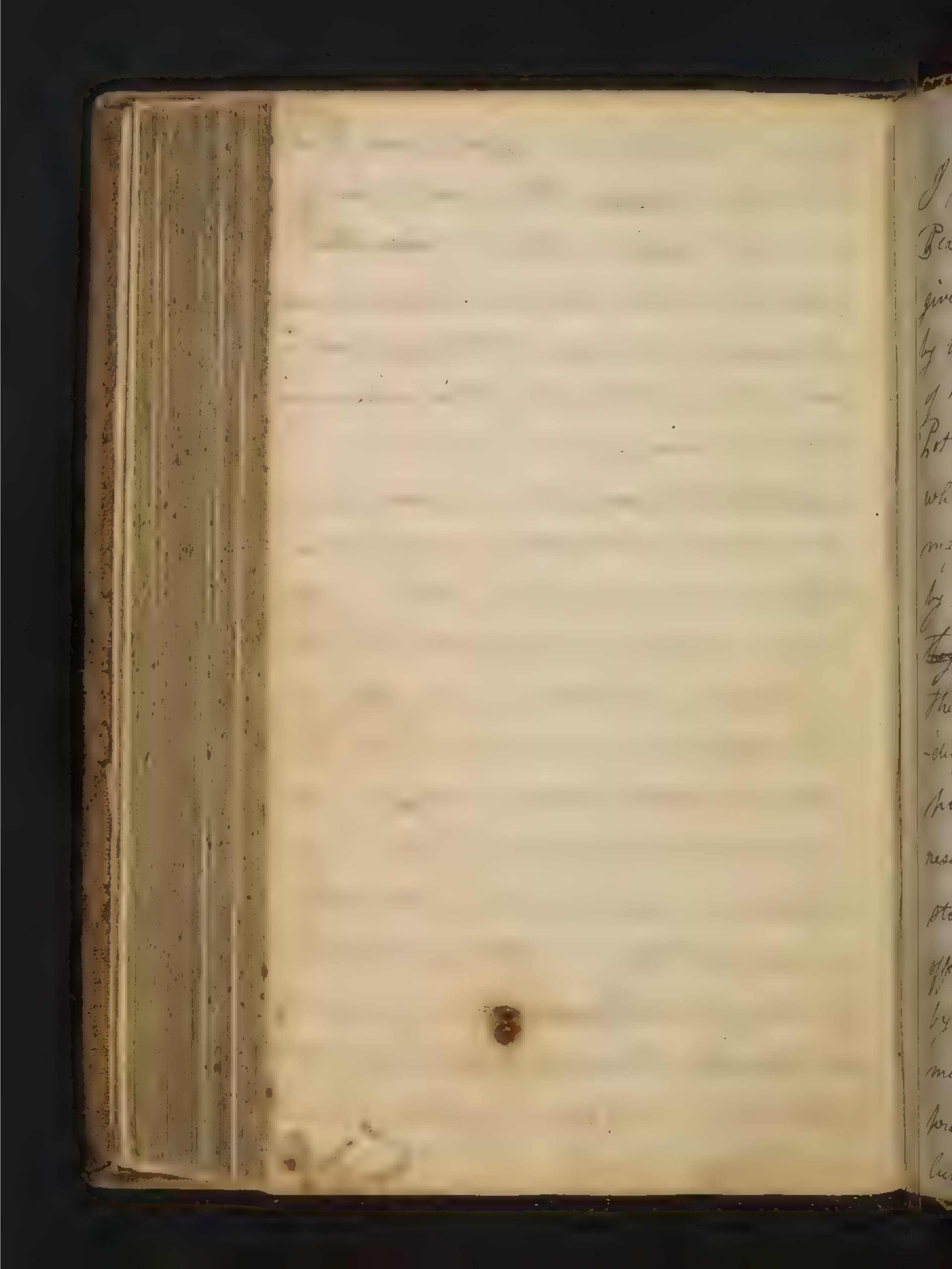
that
suffer
sit
him
her
they
they
at
to
her
for
pe
the
-ity
pe
or
an
If
Sh
Do
dep

that it would require longer time to get a sufficient quantity - his circumstances and situation in life, in all cases not allowing him time for this purpose - Some persons have great aversion to animal food because they think it criminal to kill animals - they being innocent? - Man lives necessarily at war with a thousand animals, in order to obtain the means of existence - it is perverted reason that denies the use of animal food — Aliments support the System 1st By the Stimulus of their weight and distention in the stomach - 2 By the facility or difficulty with which they impart pleasure to the sense of taste 3 the gradual or prompt manner with which it is digested and affords nourishment to the Body -
It is not necessary in all cases that aliments should be digested speedily - some should sometimes be selected on account of their difficulty of digestion - this is the case in

Dyspepsia - in which the long continuance of the food in the stomach, is necessary to stimulate it - they derive their nutriment from the following viz, sugar, oil, mucilage, starch, gum, and sometimes acid, they are most nourishing when containing most sugar and oil - the vegatable aliments are derived from nuts, grain, seeds, pot herbs, salled &c the grain in the united States are wheat, rye, barley oats &c - unleavened bread nourish-es more than leavened - fresh or hot bread is difficult of digestion - Bread made of flour, with sugar and milk mixed with it is not as good as when made simple Rye affords bread which is neither too dry nor moist - Rye and wheat mixed make good bread - Rye boiled makes good ali-ment called mush - Indian meal is very good as a diet - Indian meal and wheat flour equal parts made into Bread is the best diet for invalids -

Apple dumplings for invalids are best when made with potatoes boiled and mixed into a paste with flour, without the addition of water – the potatoes contain moisture enough – this digest easy and feels light on the stomach – Indian corn roasted and grated into milk or cream, by adding a little butter and salt makes a very good diet Indian corn is prepared by beating it and is called Hominy, persons who feed on this are more healthy than other folks. a pleasant gruel is made by boiling the fine meal of corn in milk and adding lime juice – Rice is a wholesome grain when boiled in milk and sugar added makes a nice diet – raisons are often added – a handfull of dried peaches are better – the raisons do not dispolve – the peaches do, and color the whole – they are much better – a pleasant bread is made by mixing powdered rice and wheat

Barley is good in broth – Oats are used for in-
-valids only. Sowings – This is good for invalids
is made by infusing oatmeal in water. then
evaporating it – the residuum is sour and may
be sweetened with sugar – The meal of oats is
made into gruel by boiling it in milk, adding
sugar and wine –
Buck Wheat meal made into cakes and
spread over with butter is a good diet –
Potatoes are pleasant when boiled or roasted –
mixed with flour, it renders the taste of apple
dumplings nice, light and very good –
the potatoes are to be boil'd and laid in
flour to absorb as much as they can, when
potatoes are too big they should be scraped
Potatoes are deprived of their bitter taste
by infusing them in water a few hours be-
-fore boiling – Turnips make good diet
for invalids – they may be deprived of the
bitter taste – in the same manner as potatoes
have them freely –



Dec. 19th —

I presume the subject of Diet —
Pease and Beans are boiled for diet and give nourishment — they are used when dried by boiling them in milk — the different kinds of Beans are prepared in the same manner — Potherbs as asparagus, cabbage &c the smell which asparagus commonly gives to the urine may be prevented as Franklin observes — by swallowing a Turpentine pill or two — They are used in the diet of the United States. The Chinese make bread of them, by pounding them in a mortar with water, then pouring off the water and baking the residuum — Cabbage is less offensive to the stomach when raised in poor ground, the offensive qualities of cabbage are lessened by boiling them alone — Dr Cullen was much attached to this diet, from the profusion of aliments, fruits are used as luxuries —

Lemons, Melons, strawberries, cocoas &c — are all nourishing in proportion to their quantity of sugar — fruits instead of being abstained from should be used to prevent disease — the currant and raspberry are often prepared in the form of wine — Salads of different kinds enter the diet of the U S largely — nuts are seldom used as articles of diet — they are too nourishing to be taken in large quantities — from half a hickory nut I obtained 30 drops of oil — the dried chesnut is agreeable in soup — when eaten often when fresh they are said to affect the head —

Animal food — this is taken from quadrupeds & birds — shell and scaly fish — amphibious animals and worms —

the domestic ~~animals~~ quadrupeds are hogs, cows, sheep &c. the wild are deer, rabbit, squirrel &c — the fish are lobsters, crabs, oysters &c, they differ in quality — they are taken either from

fresh or salt water - whole nations live on these - oysters form a medicine diet between animal and vegetable - Shell fish contain less nourishment than scale fish Amphibious Animals used in diet are the frog and turtle - these are fat in soups and afford little nourishment. The wholesome qualities of food depend on different circumstances The sex of animals influences their nutritious qualities - The female sex of most animals is the most wholesome - the age of an animal influences it quantity of nutriment, adult animals are more nourishing than those that are young - there is no difference between young and old fish in digestion - The Class of animals influences their nutriment - The Turkey and the fowl are more nourishing than the goose or Duck - The Brain and lungs of animals afford very little nourishment Birds of prey appear to know what is the

best
food
the
in a
the
wic
Ara
-dom
the
pe
gi
mo
pla
di
be
di
ac
di
of
ar
of

best and most delicious part of their food – Ravens choose the eye –
The time and manner animals are kept in a Slaughter house, influences the meat
The season in which animals are killed influences their nourishment – in the Spring and Autumn they are life wholesome – in wet weather mutton is not good
the place in which animals have been fed and fattened influences their power of giving nourishment – Sheep fed in high mountains are better than those fed on plains – animal food is rendered more digestible by driving the animal a while before death – wild meat digests sooner than domestic – hogs are better when fed on acorns than on swill – The English deer are better than the American on account of their flavor – the manner in which animals are killed influences the quality of the meat – Dr Franklin found that the

meat of animals killed by electricity, was easier of digestion than when killed otherwise — the duck and goose should be eat 10 or 12 hours after being killed — fish should be eaten very soon after being caught animals bled largely before death, tend less to putrefaction — animal food is preserved in different ways — by hanging it in an Ice House, in cool air, by covering it with powdered charcoal or salt — by infusing it in Spring water below the surface — thunder and lightning hasten the putrefaction of flesh — meat a little tainted may be purified by putting it into Lime water — digestion of meat is influenced by the manner of cooking it — its being well masticated — flesh is prepared by boiling with vegatables and made into Soup — Barley Broth, make a very good diet, broth is best made by putting all the ingredients in a pot over a slow fire —

3 or 4 hours before dinner time - it is not to boil till towards the last, when it may boil about 5 minutes, the boiling raises the fat to the top, which being skimmed off you have excellent soup, Meat is prepared by roasting - thus alone it is soluble and nourishing - boiled meat is nourishing - meat by being boiled a little and then broiled is excellent - this is done with Mutton - thus it is with geese and ducks - meat is cooked by frying & also by baking - mutton half roasted and then made into hash is very good - Mutton made into pot pies is good - by exposure to smoke meats are often rendered better - these stimulate the Stomach but are slow of digestion - Milk and Eggs enter largely into the diet of man of the former I spoke some time ago Eggs are of a compound Nature like milk - the white partakes of a vegatable nature, the yolk is animal

the C
wide
the
-era
are
ano
the
Jeri
the
Thou
Meta
-men
are
and
-bal
Jug
men
they

the latter putrefies first — stom achs that will not bear a whole egg, will often retain the yolks seperately — they afford consid-erable nourishment —

## Condiments

are divided into Saline, oily, alliaceous aromatic &c they stimulate the tongue, also the salivary glands — and they increase the secretion of Gastric juice, and stimulate the bowels, they produce excitement throughout the system, some of them retard digestion, some prevent the frequent recurrence of hunger, some of them are nutritious — the Saline are common Salt and acid — the use of Salt is almost univer-sal — when used sparingly it is certainly good the acids are the juice lemons limes &c Sugar, honey, molasses &c add to the nutri-ment of aliments — when taking too largely they impair the digestive powers —

the
face
nut
veal
will
gall
and
Bon
of
Tru
Ann
mor
the
ile
they
See
hea
See
peo
to t
Then
Case

the Oily are almonds, butter &c They facilitate deglutition and are always nutritious, Pork is more nutritious than veal because more fat-

Alliaceous condiments - Onions, leaks garlic beets &c - they are gently stimulating moderately nourishing - retard digestion of some aliments - Germans haefer vinegar French Sugar, English butter, Spanish Onions, Italians garlic, but the Americans more wisely use them all -

The aromatics are pepper, allspice ginger &c all these are generally taken simple; but they are sometimes taken mixed -

Ice creams are taken as luxuries, and to healthy persons are the causes of dysentery

Tea and coffee are generally used by all people - the objections that have arisen to tea and coffee are solely owing to their being taken too strong - this is the case with every thing else -

they b
food
bain
alin
ardc
has o
ter
bodj
bel
port
horz
ina
Ha
to a
Thu
m
fine
Ar
fu
Ai

they lessen the consumption of animal food and ardent Spirits - coffee lessens the pain of cold, the liquids used with our aliments are water, fermented liquors and ardent Spirits. water is the best which has no smell nor peculiar taste, cold water should never be drank while the body is hot - wash the hands and face before drinking if you are very warm - porters throw buckets of water over their horses when warm previous to giving them water; the same might be done with the Human Species - it is an old notion to say that water should be cold to allay thirst - water when very cold acts as a sedative on the whole system and sometimes produces fever - it is common with many to take a draught of cold water before going to bed - this is a very injurious practice - and impairs digestion - simple as water is it is nourishing somewhat nutritious -

Fermented liquors - these are beer, cyder, wine of the grape &c - beer is made from different grain but barley is chiefly used, beer is good for Laborers only - Cyder contains much Sacharine matter - it is a nutritious and pleasant Drink - it is said to be injurious in gout - boiled cyder is much the best - either alone or mixed with water -

Dec. 20th -

Manner of eating articles of diet so as to preserve health -

The stomach sometimes sleeps like the conscience - but it is only a temporary sleep - it will awake sooner or later - a definite portion and moisture promotes vegatation - a definite portion of wind and water is necessary to the motions of a mill - so it is with the Animal Oconomy - the stomach requires a definite quantity of a certain kind of food - and no more -

It is a rare occurrence to find an intemperate

Man
such
Hand
as to
we o
abou
or m
Last
qua
but
we a
term
rece
from
of
qua
ma
foon
Gl
dom
tage

Man, be long liver and a healthy Man — Such a case is like a high prize among 20 000 Blanks — the appetite is often an unsafe guide as to the quantity or quality of food to be eaten we should abstain from eating when we are about to deliberate wether we have enough or not — As in Morals so in eating —

Taste is an unsafe guide in determining the quality of food — cabbage is grateful to the taste but offensive in many cases to the Stomach we should always endeavor to live on good terms with our stomachs — the cordial reception that the stomach gives to some food is not always a correct guide — the quality of food in some cases should regulate the quantity — 4 times the quantity of vegatables may be eaten, that we can eat safely of animal food — Size or Shape influences the quality of Aliments — the mixture of different aliments sometimes occasion bad digestion — great advantages arise from making our entire meals from 1 Dish —

Varieties
the Sh
only
enter-
to ca
all
to ne
-nes
~~abt~~
lazy
of a
-ical
to a
of
to y
cate
in b
Ma
rec
me
-ma

Variety of aliments leads to excess and injures the Stomach – this limitation in variety extends only to animals – many vegatables may be eaten together – man like the horse was intended to eat always a small quantity of food at all times in the stomach is more favorable to health – than alternate fullness and Emptiness – a small quantity of food when ~~thrown out~~ digested, is more easily thrown out than large ones – I expect that excess in the use of ardent spirits was occasioned by the periodical custom of eating – something was necessary to stimulate the stomach at the intervals of eating, and for this Rum &c was resorted to, as custom has fixed certain periods of eating it is necessary to consider what time is best – a meal in the Evening is used by many – the System is more adapted to its reception at this time – Steep after a full meal should be avoided – for the full stomach pressing on the aorta &c proves injurious

producing colic &c and in some cases apo-
-plexy. This Evening meal acts a gentle
Stimulus to elevate the System to the sleeping
point — Custom has made it universal to
eat a meal at mid day — Sleep after dinner
should be in an easy chair — this is much safer
than lying down — when sleeping in a chair
we should keep the head straight or erect —
if this be not attended to vertigo is produced —
Meals should be taken daily at the same hour
neglect to this rule proves very injurious —
This is case especially in the Evening of life —
It is common with some to take a glass of
wine bitters before dinner — this is a bad
practice — the less drink before dinner
the better — Physicians have differed as to
the opinion whether food should be taken
hot or cold — the former is the best practice
The practice of carving meat at the dining
Table is very incorrect and injurious — the
System is debilitated and anxious for food

to contend with a tough goose half an hour is very debilitating – a man who carves and old goose, well earns his dinner – it would be better to have the meat carved before it comes to the table – Meals should be diminished in quantity – 1° When the body is little indisposed by colds &c 2 in hot weather 3 in Fevers – 4 in warm emotions of the mind and great excitement of the passions Persons who live in convivial Society – should fast once a week – While Dr Franklin was minister from the US to Paris he refused to dine out a certain day in every week – on that day he eat bread & water – the reason he gave for this was, to give Nature a holiday, to clean out her Streets – an assertion highly honorable to our venerable Philosopher – a little abstinence in eating is as salutary now and then as a diminution accasionally – It keeps all the passages of Nature open

and
not
use
than
Hay
Page
opin
Obi
le
The
hav
and
Jo
Inc
yet
Ma
i
wh
yet
Lai
life
life
we

and all her wheels in motion - he knows not the harmless nature of eating, who does use a little excess once a week, no more than him who fares sumptuously every day know the pleasures of a feast, — Age, occupation & region diet of an appropriate nature - the diet of children should possess little stimulus and should be nutritious, grains are the best for them. The finest constitutions in America have grown out of potatoes, Indian corn and Molasses — I knew an old Man aged 75, I met him one day, and accosted him with my surprise at finding him yet alive - Oh! Man said he, folks in my young days lived differently from what they now do I may live 20 years yet, for the foundation of my system was laid in Potatoes, as children advance in life they may eat more stimulating food we should not use it highly seasoned,

little butter - why pour oil into the fire -
children should eat often - a crust of Bread
or a roast potatoe should always be at
hand, wine and fermented liquors should
be given them in small quantities, they
should never use ardent spirits - Malt liq-
-uors are very necessary - I have known
Children preserved solely by the influence
of wine - in youth the vessels are irritable
and the nerves sensible to a great degree
here the quantity of food should be less than
the appetite calls for - boiled meat is better
than that which is roasted - in middle
life the system changes - its irritability
and sensibility are equal - to persons of
this age I would only recommend the
rules I have annexed to diet -
Good health like money is a capital -
the less it is expended in youth the more
is laid up for old age - the Spaniard say
if you wish to be a young man when you are old

be an old man when you are young—
in old age the blood flows with langour
the senses become dull. the nerves are less
sensible, but the system requires irritability
the appetite increases, while the teeth dispose
of their dockets. the diet should be cordials
but not nourishing, as fish, pastry, coffee
tea &c the diet of Dr Cullen in his 75 year
consisted of fish and broth. the mean old people
advance to their 75 year, the oftener they eat
"Fine dies been called the milk of old age"
this is incorrect — malt liquors are useful
in old age — in old age except exercise be
used the system is subjected to plethora —
this is relieved by small Bleeding, low diet &c
in the decline of life the system calls for
cordial drinks and fat meats; they often call
for food at night and they should be grat-
-ified — thus they become children a 2d time
Ardent Spirits should not be given —
Women require less stimulus than men from

their having less exercise - Tuberca-
tion bring on the decay of old
age - by stimulating the brain - their
diet should be small but not very nour-
-ishing - coffee should be taken largely
the diet for sedentary persons should be
some what like the former - Labourers
require more stimulating and nourishing
food than those who do nothing - the
soils in the Harvest of Rome were lep-
-ered by eating onions - the drink
of Labourers should be simple and
moderate, such as molasses and water
milk and water &c -

The Curse of Labour is Ardent Spirits

# Index - to - Vol. 1st

## A


Animal Life - Page - 59/51
— — — Heat — 89
its uses - 115
Arteries peculiarities of — 231
Amnesia — 244
Association — 250
Attention. 277
Appetite pleasure of — 439
Aliments — 453
Animal food. 455
Amphibious Animals 465
Aromatics —

# B


Blood, its moving powers 119 121
Brain — 125
Brutes — difference of mind in 251
Blood its Nature 351
Bile — 407
Bread — 445


# C


Chemical Lectures 91
Creeping pulse 57
Combustion 53
Circulation of the Blood 111
Contiguous Sympathy 171
Conscience 239
Common Sense
Contemplation
Consciousness 259
— — — Returns of —
Causes of Dreams Hunger Thirst
Style Rhyme Fragmentum
Sympathy of Life Satanica

Debates of the United States — 29
Delaware Paper — 43
Direction for feeling the pulse — 57
Death — Dreams
Drinks — Digestion
Diffusion of the Blood



Credibility
Examination
Eyes —

H

Fear

Faculties

Female Sex

Fat

Female mind

Fermented Liquors

G

Gastric Juice

Generation

H.

Hearing

Hymen

I.

Inquiries into the morbid state of human mind

Influence of Habit on Association act

Inverse sympathy

Idiosyncrasies

Instinct

Imagination

Intuition

If

Judgement –

K

Ga
Gen

P

Lymphatics
Laws of sensation

(11)

Moral Faculty
Muscles
Motion
Memory
Morbid Sleep -
Male Sex -
Morph
Effect
Bulk
Manner of eating

N

Nerves —
Natural Pulse
Nervous influence
Nature of the Blood

O

Operations of Nerve — 43
Office of Muscles
Organs of Muscular Power
Operation of the Mind

(1.)

Physiology — Page 25
Anatomy — 25
Taste — 35
— of morbid State — 41
Pain — 43, 45, 47, 49, 51, 53, 55
Principle of Activity
Peculiarities of organic arteries
Principle of Sympathy

(2.)

Peculiarities of Touch
Optical Perception
Pleasures of the Sense of Touch
Taste
Hearing
Proximate cause of Pleasure
Pleasures of Appetite — Consciousness
Faculties
Phenomena of Rest — Dreams — Digestion
Perspiration
Peculiarities of the Hair
Potatoes —

John Stouffer
Lorain Stouffer

Jacob Stouffer
Jeffer Brand

1882

2/434

2/217

2/217
108

54 2/217
24/103 4 ½
9
7

14/54 12
48
6

ex libris